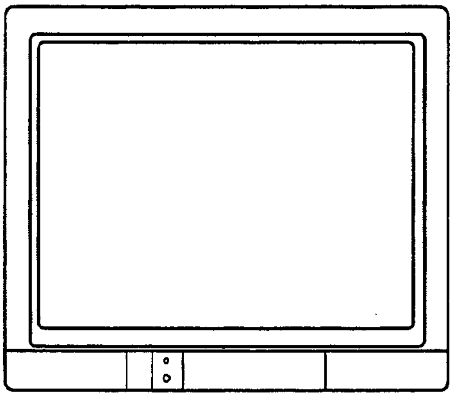
Mar 1996

MITSUBISHI

Service Manual

Colour TV



Models

CT-21M5E
CT-21M5ET CT-25M5ET
CT-21M5RT CT-25M5ETN
CT-25M5E CT-25M5RT
CT-25M5EN CT-25M5RTN

SPECIFICATIONS

Reception System	CCIR-BG/DK PAL/SECAM		
Reception Frequency	UHF: 470MHz~862MHz		
	VHF: 47~170MHz (VB1), 170~448MHz (VB2)		
Mains Input	AC 220 ~ 240V 50Hz		
Power Consumption	88W	(CT-21M5E)	
	90W	(CT-21M5ET, RT)	
	98W	(CT-25M5E, EN)	
	100W	(CT-25M5ET, ETN, RT, RTN)	
Aerial Input	75 ohm		
Intermediate Frequency	Video	38.9MHz	
	Sound	32.4MHZ, 33.4MHz	
Audio Output	5W (Music Power)		
Speaker	100mm round		
Chassis	EE4		
Picture Tube	A51EFS43X09	21", 90° deflection	(CT-21M5 models)
	A59ECY13X01	25", 110° deflection	(CT-25M5E.. models)
	A59ECF20X05	25", 110° deflection	(CT-25M5R.. models)
Cabinet dimensions	497mm x 485mm x 448mm	(CT-21M5 models)	
(approx. W x D x H)	572mm x 446mm x 505mm	(CT-25M5 models)	
Weight	21Kg (CT-21M5 models)		
	25Kg (CT-25M5 models)		

MITSUBISHI ELECTRIC CORPORATION

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1 GENERAL NOTES

1.1 SAFETY PRECAUTIONS

1.1.1 General Warnings

1. Observe any cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.
2. An isolation transformer should be used between the television receiver and the AC power supply point before any test or servicing is performed on a LIVE chassis television receiver.
3. Operation of these receivers outside the cabinet or with the back cover removed involves a shock hazard from the receiver power supplies. Work on the receiver should not be attempted by anyone who is not familiar with the precautions necessary when working on high voltage equipment.
4. Do not install, remove or handle the picture tube in way unless shatter-proof goggles are worn. People not so equipped should be kept away while the picture tube is being handled. Keep the picture tube away from the body while handling.
5. When service is required, observe the original lead dressing. Extra precaution should be given to assure correct lead dressing in the high voltage area. Where a short-circuit has occurred, replace those components that indicate evidence of overheating.

1.1.2 X-RAY Warning

Under fault conditions the CRT can generate X-rays. The use of a lead apron is recommended if available.

When replacing the CRT only use the designated replacement part as it is a critical component with regard to X-rays. No high-voltage adjustments are provided.

1.1.3 Leakage Current Check

Before returning the receiver to the customer it is recommended that the leakage current be measured according to the following method:

With the AC plug removed from the AC source, place a jumper across the live and neutral pins. Turn the receiver AC switch on. Using an OHM-METER, connect one lead to the shorted AC plug and touch the other lead to each exposed metal part (antennas, screw heads, etc.) in turn, particularly any exposed metal part having a return path to the chassis. Any resistance below a value of 1 MEG OHM indicates an abnormality which requires corrective action.

1.2 CONTROLS AND CONNECTORS

1.2.1 Front Panel

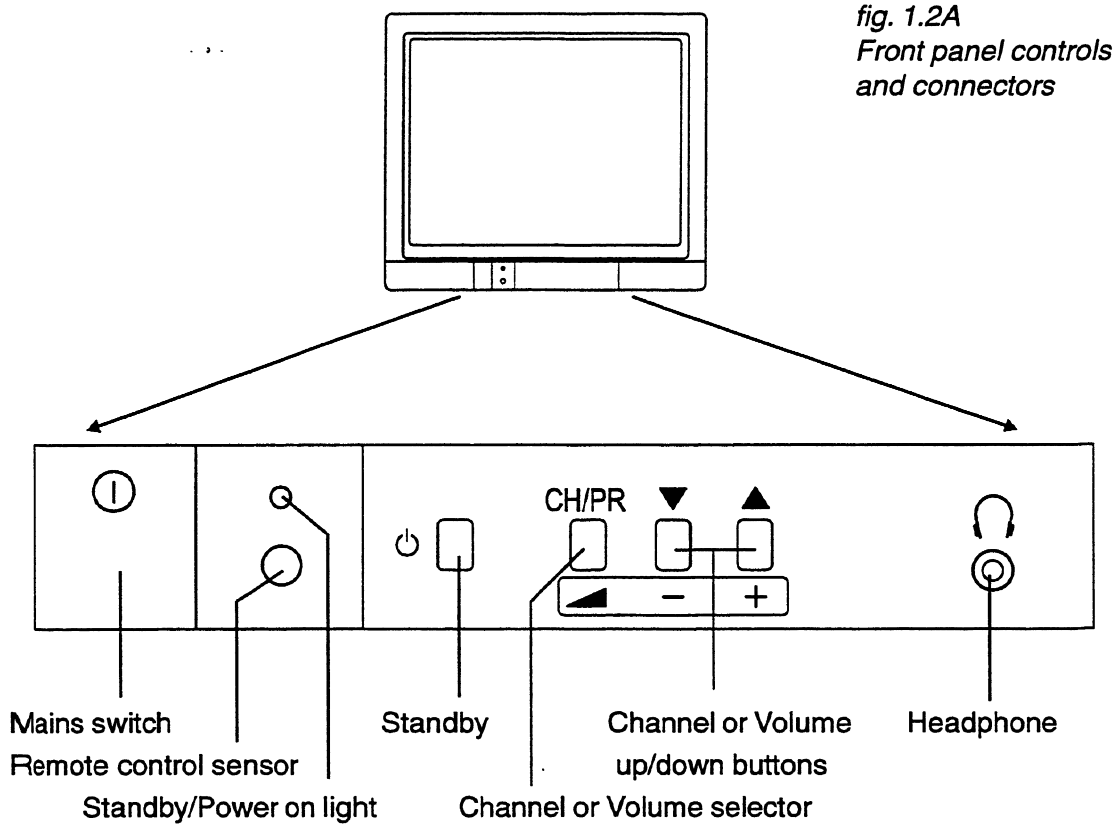

CH/PR
Mains switch
Remote control sensor
Standby/Power on light
Standby
Channel or Volume selector
Channel or Volume up/down buttons
Headphone

fig. 1.2A
Front panel controls and connectors

1.2.2 Rear Panel

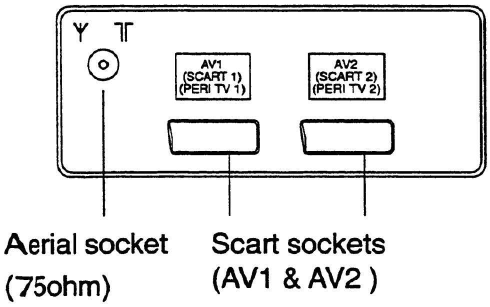
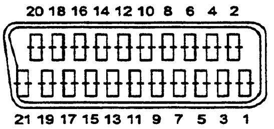

AV1 (SCART 1) (PERI TV 1)
AV2 (SCART 2) (PERI TV 2)
Aerial socket (75ohm)
Scart sockets (AV1 & AV2)

fig. 1.2B Rear panel connectors


20 18 16 14 12 10 8 6 4 2
21 19 17 15 13 11 9 7 5 3 1

Pin	AV1	AV2
1	Audio out – R	Audio out – R
2	Audio in – R	Audio in – R
3	Audio out – L	Audio out – L
4	Audio earth	Audio earth
5	Blue earth	Earth
6	Audio in – L	Audio in – L
7	Blue in	Not connected
8	Function switch	Function switch
9	Green earth	Earth
10	Not connected	Not connected
11	Green in	Not connected
12	Not connected	Not connected
13	Red earth	Chroma earth
14	Blanking earth	Earth
15	Red in	Chroma in
16	RGB blanking	Not connected
17	Video out earth	Video out earth
18	Video in earth	Y earth
19	Video out	Video out
20	Video in	Y in
21	Socket earth	Socket earth

fig. 1.2C Scart socket pin details

1.3 REQUIRED EQUIPMENT

1.3.1 Measuring equipment

- Oscilloscope
- Signal generator
- DC milliammeter
- DC voltmeter
- Frequency counter (optional)

1.3.2 Test signals

- PAL Cross-hatch
- PAL Monoscope (or a VCR playing a monoscope alignment tape)
- PAL Colour-bar with the specification as in figure 1.3A below:

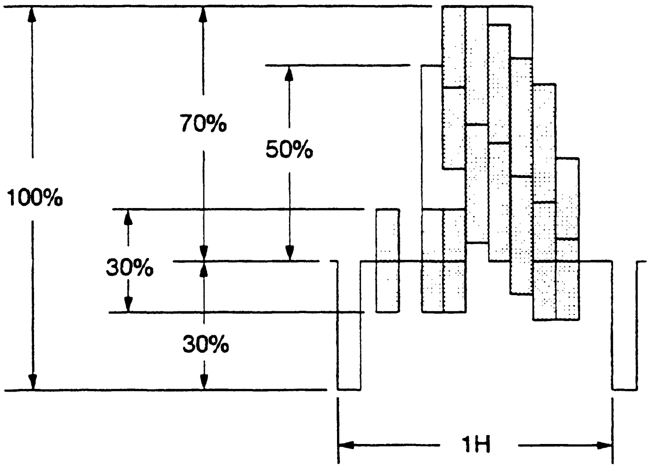

70%
50%
100%
30%
30%
1H

fig. 1.3A Split-field colour bars (with 100% window)

1.4 CONNECTING LEADS

1.4.1 Identification

Connecting leads are identified by the colours of their wires according to figure 1.4A below:

Colour	Code
BLACK	A
BROWN	B
RED	C
ORANGE	D
YELLOW	E
GREEN	not used (earth)
BLUE	G
VIOLET	H
GREY	J
WHITE	K
PINK	L

Example:

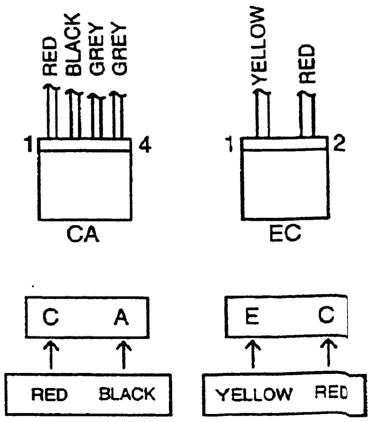

RED
BLACK
GREY
GREY
1
4
CA
YELLOW
RED
1
2
EC
C A
RED BLACK
E C
YELLOW RED

fig. 1.4A Connecting lead identification chart

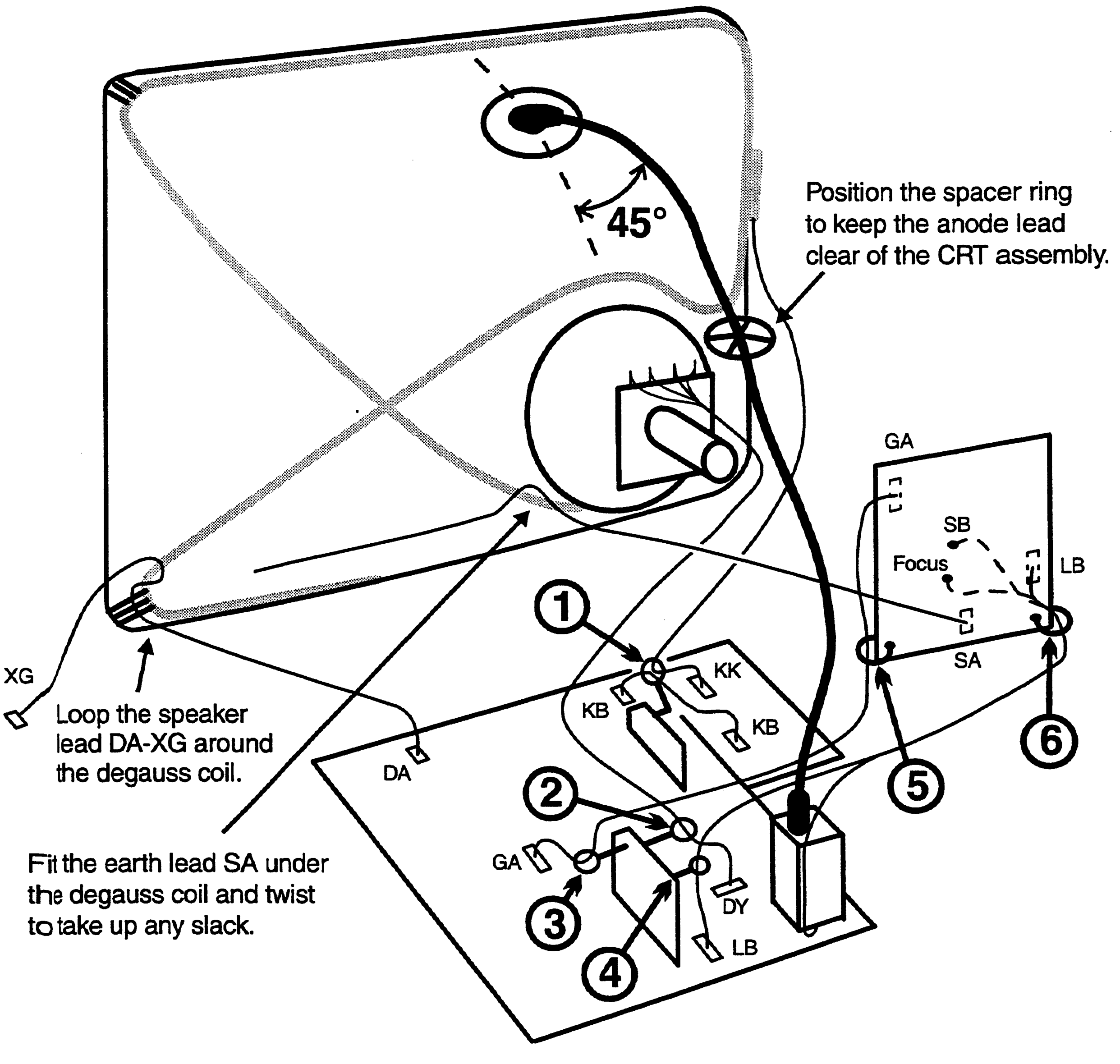
1.4.2 Lead dressing

Leads must be dressed as shown in table 1.4B and the diagram (fig. 1.4C) below. The leads are routed or clamped so that they do not come close to any heat generating or high-tension parts.

The anode lead wire is routed such that no tension is applied to the anode cap. If the mounting angle of the anode cap and the route of the anode lead wires are changed, return them to the initial angle and route.

CLAMP	LEAD	SPECIAL INSTRUCTIONS
1	KB, KK	
2	DY	
3	GA	Make a loop in GA to take up any slack.
4	LB	
5	GA	
6	LB, SB, Focus	Make a loop in LB to take up any slack.

table 1.4B Lead-dressing table.



Position the spacer ring to keep the anode lead clear of the CRT assembly.

Loop the speaker lead DA-XG around the degauss coil.

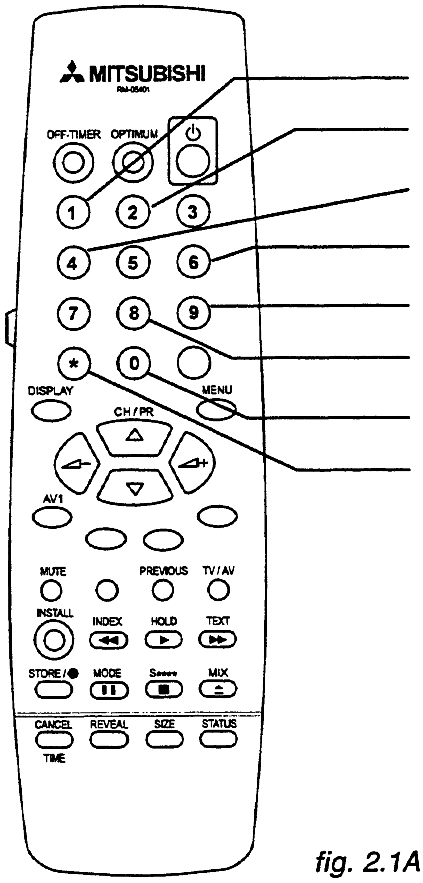
Fit the earth lead SA under the degauss coil and twist to take up any slack.

fig. 1.4C Lead-dressing diagram.

2 SERVICE ADJUSTMENT PROCEDURES

2.1 INTRODUCTION

Most service adjustments to these models are made using the remote control (figure 2.1A) with the TV in service mode. The adjustment data is stored in an EEPROM.


MITSUBISHI
OFF-TIMER
OPTIMUM
1
2
3
4
5
6
7
8
9
*
0
DISPLAY
MENU
CH/PR
AV1
MUTE
PREVIOUS
TV/AV
INSTALL
INDEX
HOLD
TEXT
STORE/●
MODE
MIX
CANCEL
REVEAL
SIZE
STATUS
TIME

1	Cancel
2	Increase Adjustment code number
4	Decrease data value
6	Increase data value
9	Adjustment mode on
8	Decrease adjustment code number
0	Write to EEPROM
*	Toggle adjustment display

fig. 2.1A Remote Control Unit

2.1.1 Basic adjustment procedure

1. Turn the power on. With a small screwdriver, press the Service switch (S701, next to the aerial socket) and then button "9" within 5 seconds to enter service mode.
2. Press the * button to select either the VCJ or OPTION adjustment display (figs. 2.1B and C).

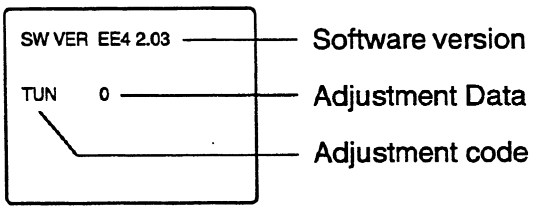

SW VER EE4 2.03
TUN 0
Software version
Adjustment Data
Adjustment code

fig. 2.1B Options adjustment display

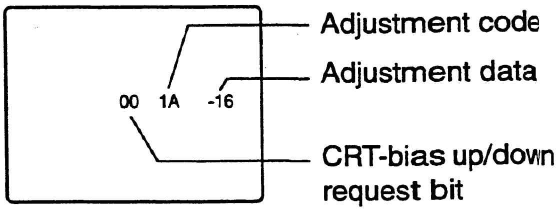

00 1A -16
Adjustment code
Adjustment data
CRT-bias up/down request bit

fig. 2.1C VCJ adjustment display

3. Press buttons "2" or "8" to increase or decrease the adjustment code number.
4. Press buttons "6" or "4" to increase or decrease the data value.
5. After completing your adjustments, press button "0" to write the adjustment data to the EEPROM.

   To cancel a change, press button "1" (or the Standby button) before writing the adjustment to the EEPROM. All data adjusted since the last EEPROM write will be reset.

2.2 INITIALISING THE EEPROM

If you have replaced the EEPROM (IC702) or if for any reason the adjustment data has become corrupted it will be necessary to initialise the EEPROM.

2.2.1 Initialsing the EEPROM

1. If necessary, switch off by the Main switch.
2. Hold in the service switch (S701, next to the aerial socket) while switching on by the Main switch.
3. Release the service switch after 3 seconds.
4. Switch off by the Main switch.

   The EEPROM data values have now all been reset to their initial default values as shown in table 2.2C.
5. Switch on by the Main switch. Press the Service switch and then button "9" within 5 seconds to enter service mode.
6. Press the * button to select the OPTIONS adjustment display.
7. Press buttons "2" or "8" on the remote control to select the adjustment code.
8. Adjust the data value for each code using buttons "2" or "4" on the remote control according to table 2.2A below:

   (Other adjustment codes may be displayed but are not applicable to these models.)

CODE:	TUN	ATS	STD	SYS	AVI	TXT	EEP	FFT	HTL
CT-21M5E	1	0	3	1	1	0	1	0	1
CT-21M5ET	1	0	3	1	1	2	1	1	1
CT-21M5RT	1	0	3	1	1	1	1	1	1
CT-25M5E	1	0	3	1	1	0	1	0	1
CT-25M5EN	1	0	3	1	1	0	1	0	1
CT-25M5ET	1	0	3	1	1	2	1	1	1
CT-25M5ETN	1	0	3	1	1	2	1	1	1
CT-25M5RT	1	0	3	1	1	1	1	1	1
CT-25M5RTN	1	0	3	1	1	1	1	1	1

table 2.2A Data values for the OPTIONS adjustments.

9. Press the "0" button to write the changes to the EEPROM.
10. Press the * button to select the VCJ adjustment display.
11. Press buttons "2" or "8" on the remote control to select the adjustment code.
12. Adjust the data value of each code using buttons "2" or "4" on the remote control according to table 2.2B below:

    (Other adjustment codes will be displayed but the default values need not be changed.)

CODE:	07	11	12	19	1B	1C
CT-21M5E/ET/RT	-7	001	010	-6	-11	00
CT-25M5E/EN/ET/ETN/RT/RTN	-7	001	010	-6	-13	-2

table 2.2B Data values for the VCJ adjustments.

13. Press the "0" button to write the changes to the EEPROM.

2.2.2 EEPROM Default data values.

These values are adequate to allow the set to be adjusted.

VCJ data values

CODE	FUNCTION	DATA VALUE
00	V-AMP	-16
01	V-CORRECT	-31
02	P-AMP	+05
03	TILT	-12
04	V-LIN	+23
05	C-CORRECT	-09
06	H-AMP	-22
07	16x9 - SW.RGB-MATRIX	-7
08	V-SHIFT	+02
09	H-PHASE	+10
0A	B-DRIVE	+01
0B	G-DRIVE	+01
0C	R-DRIVE	+01
0D	CONTRAST	+14
0E	BRIGHT	+01
0F	COLOUR-SAT	+10
10	NTSC-TINT	00
11	SHARP	111
12	PAL-LUMA-DELAY	111
13	SECAM-LUMA-DELAY	111
14	V-AMP-60	00
15	P-AMP	00
16	H-AMP-60	00
17	V-SHIFT-60	00
18	H-PHASE-60	00
19	H-PHASE-TEXT	00
1A	H-PHASE-SECAM	00
1B	H-PHASE-RGB	00
1C	P-AMP-16 : 9	00
1D	358NTSC-LUMA-DELAY	111
1E	443NTSC-LUMA-DELAY	111

OPTIONS data values

ITEM	DECRIPTION	DATA VALUE
TUN	TUNER TYPE	0
SAT	Not Applicable	
AUD	Not Applicable	
ATS	AUTO TUNING SORT	0
STD	RECEPTION STANDARD	0
SYS	COLOUR SYSTEM	0
AVI	NO. OF AV INPUTS	0
AVD	Not Applicable	
EEX	CHASSIS TYPE	N/A
SPK	SPEAKER SW ENABLED	N/A
EEP	EEPROM SIZE	1
ABG	Not Applicable	
AI	Not Applicable	
AL	Not Applicable	
ADK	Not Applicable	
MNP	Not Applicable	
TXT	TELETEXT TYPE	0
FFT	FAST / TOP TEXT	0
HTL	HOTEL MODE ENABLE	1

table 2.2C EEPROM Default data values.

2.3 VIF CIRCUITS

2.3.1 RF-AGC

VR101 (adjacent to the tuner)

1. Connect an RF signal such as an off-air broadcast.
2. Check the AFT is on for the current channel.
3. Adjust VR101 so that the picture and sound exhibit no noise, beat or intermodulation distortion.

2.4 DEFLECTION CIRCUITS

2.4.1 Important notes

Before making any adjustments, if you have changed the CRT, FLYBACK TRANSFORMER or made any changes in the deflection circuits; adjust the CRT bias as described in 2.6.1 steps 1 ~ 6 (*Video Circuits – Screen control*).

Check the VERTICAL BREATHING CORRECTION as follows:

1. Select the VCJ adjustment display.
2. Set the adjustment code to "01" with buttons "2" or "8" on the remote control.
3. If neccessary, adjust the data value to "-31" using buttons "4" or "6" on the remote control.

2.4.2 Horizontal centre

Code 09 (H-PHASE)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to "09" with buttons "2" or "8" on the remote control.
4. Adjust the horizontal position with buttons "4" or "6" on the remote control.

2.4.3 Horizontal width

(CT-25M5 models only)

Code 06 (H-AMP)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to "06" with buttons "2" or "8" on the remote control.
4. Adjust horizontal width with the buttons "4" or "6" on the remote control.

2.4.4 East-West PCC

(CT-25M5 models only)

Code 05 (CORNER CORRECTION)
Code 03 (PARABOLA TILT)
Code 02 (PARABOLA AMP)

1. Connect an RF PAL Cross-hatch signal.
2. Select the VCJ adjustment display.
3. Set the adjustment code to "05" with buttons "2" or "8" on the remote control.
4. Adjust the data value to "-25" with buttons "4" or "6" on the remote control.

5. Set the adjustment code to “03” with buttons “2” or “8” on the remote control.
6. Watching the second vertical line in from both sides of the screen (figure 2.4A), make any upper and lower distortion symmetrical using buttons “4” or “6” on the remote control.
7. Set the adjustment code to “02” with buttons “2”or “8” on the remote control.
8. Adjust the straightness of both vertical lines (figure 2.4B) using buttons “4” or “6” on the remote control.
9. Repeat steps 1 to 8 above if necessary.
10. Connect a VCR and play a PAL-Monoscope alignment tape.
11. Make sure the horizontal width and horizontal centre are correct. If necessary re-adjust Horizontal Centre (“09”) and Horizontal Width (“06”) again.

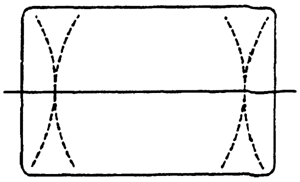


fig. 2.4A

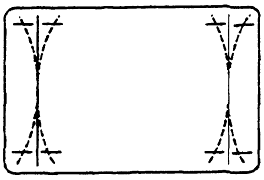


fig. 2.4B

2.4.5 Height and linearity

Code 00 (V-AMP)
Code 04 (V-LIN)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to “00” (V-AMP) with buttons “2” or “8” on the remote control.
4. Adjust the circle to a true circle with buttons “4” or “6” on the remote control.
5. Set the adjustment code to “04” (V-LIN) with buttons “2” or “8” on the remote control.
6. Adjust the linearity to be the same for the top and bottom halves of the circle using buttons “4” or “6” on the remote control.
7. Set the adjustment code to “00” (V-AMP) with buttons “2” or “8” on the remote control.
8. Re-adjust V-AMP with buttons “4” or “6”.
9. Repeat the steps above, if necessary.

2.4.6 Vertical centre

Code 08 (V-SHIFT)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to “08” (V-SHIFT) with buttons “2” or “8” on the remote control.
4. Adjust the centre line of picture to be within +/- 3mm from the vertical centre on the screen using buttons “4” or “6” on the remote control.

2.4.7 60Hz Defection circuit offsets

Code 14 (V-AMP 60)
Code 15 (P-AMP 60)
Code 16 (H-AMP 60)
Code 17 (V-SHIFT 60)
Code 18 (H-PHASE 60)

1. Connect an RF 60Hz Cross-hatch signal.
2. Select the VCJ adjustment display.

3. Select each adjustment code in turn with buttons “2” or “8” on the remote control and adjust each item to the figures shown in table 2.4C below using buttons “4” or “6” on the remote control.

CODE:	14	15	16	17	18
CT-21M5E/ET/RT	+8	–	–	+7	-7
CT-25M5E/EN/ET/ETN/RT/RTN	+9	+1	-2	+7	-7

table 2.4C 60Hz adjustment offsets

2.5 CRT CIRCUITS

2.5.1 White balance

Code 0A (B-DRIVE)
Code 0B (G-DRIVE)
Code 0C (R-DRIVE)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment codes to “0A”, “0B” and “0C” in turn and pre-adjust each to “+05”.
4. Adjust codes “0A” and “0C” to adjust the white balance.

2.5.2 Focus

FOCUS control on the Flyback Transformer

1. Connect an RF signal such as an off-air broadcast.
2. Adjust the FOCUS control for the best overall focus.

2.6 VIDEO CIRCUITS

Perform the following adjustments after adjusting the Deflection circuits. Allow the TV to warm up for 20 minutes before proceeding

2.6.1 Brightness and Contrast

SCREEN control on the Flyback Transformer
Code 0F (COLOUR SATURATION)
Code 0E (BRIGHTNESS)
Code 0D (CONTRAST)
BEAM CURRENT (using connector TP adjacent to the Flyback Transformer)

1. Connect an RF Cross-hatch signal.
2. Select the VCJ adjustment display.
3. Make sure that the Screen Up/Down Request Bit is set to “00”. If not, adjust the SCREEN control on the Flyback Transformer.
4. Change the external signal to a Colour-bar.
5. Readjust the SCREEN control to give “00”.
6. Repeat steps 1 to 5 until the Screen Up/Down Request Bit is “00” for both signals.
7. Connect an RF Colour-bar signal.
8. Set the adjustment code to “0F” with buttons “2” or “8” on the remote control.
9. Adjust the data value to “-32” with buttons “4” or “6” on the remote control.

10. Set the adjustment code to "0E" with buttons "2" or "8" on the remote control.
11. Adjust using buttons "4" or "6" so that a slight difference in brightness can be seen between blue and black areas.
12. Set the adjustment code to "0D" with the buttons "2" or "8" on the remote control.
13. Connect a DC ammeter's "+" lead to connector TP pin 1 on the MAIN-PCB and the "-" lead to connector TP pin 2.
14. Adjust the beam current using buttons "4" or "6" on the remote control to 950±20µA for CT-25M5E, ET & RT or 750±20µA for CT-21M5E, ET & RT.
15. Check, and if necessary, re-adjust the BRIGHTNESS, code "0E".
16. Check that the Screen Up/Down Request Bit is "00". If not, repeat steps 1 to 13 above.
17. Now proceed to the Colour Output adjustment.

2.6.2 Colour output

Make this adjustment only after adjusting the White Balance, Brightness and Contrast.

Code 0F (COLOUR SATURATION)

1. Connect an RF Colour-bar signal.
2. Select the VCJ adjustment display.
3. Set the adjustment code to "0F" with buttons "2" or "8" on the remote control.
4. Connect an oscilloscope to the junction of R673 and IC660 Pin 9 (BLUE-OUT) on the CRT PCB).
5. Make adjustments using buttons "4" or "6" on the remote control until the waveform is as shown in figure 2.6A.
6. Increase the resulting data value by five steps.

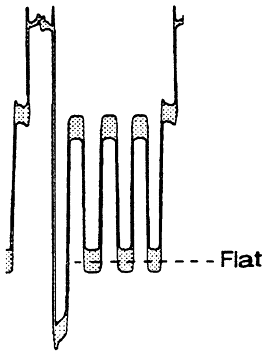


fig. 2.6A

2.7 TELETEXT CIRCUIT

CT-21M5ET, CT-25M5ET and CT-25M5ETN only.

2.7.1 Teletext free run frequency

Allow 5 minutes warm-up time before making this adjustment.

L7754

1. Ensure no RF signal is being received.
2. Connect a frequency counter between the L7754 side of C7763 and Ground or a Voltmeter between pin 28 of IC7751 and Ground.
3. Adjust L7754 to give a frequency of 22±0.3MHz or 2.5±0.1V.

2.8 POWER CIRCUIT

2.8.1 B4 Voltage

VR951 (on main PCB next to the SMT)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Push the OPTIMUM button on the remote control.
3. Connect a DC voltmeter's "+" lead to TP91 on the MAIN PCB and the "-" lead to GROUND.
4. Adjust VR951 so that the voltage is 145±2V for CT-25M5E, EN, ET, ETN, RT & RTN or 122±2V for CT-21M5E, ET & RT.

3 PARTS LIST

3.1 NOTES

3.1.1 Model-specific parts

As this service manual covers more than one model, the Service Parts List indicates where certain parts are model-specific. If there is no such indication then the parts are common to *all* models covered by this manual.

1 = CT-21M5E
2 = CT-21M5ET
3 = CT-21M5RT
4 = CT-25M5E
5 = CT-25M5EN
6 = CT-25M5ET
7 = CT-25M5ETN
8 = CT-25M5RT
9 = CT-25M5RTN

3.1.2 Ordering

In order to expedite delivery of replacement parts, please specify:

1. Model number and Serial number
2. Part Number and Description
3. Quantity

Unless full information is provided a delay in execution of the order may result.

3.1.3 Safety

Safety Critical components are indicated thus: ⚠ and must only be replaced with original Mitsubishi parts.

3.1.4 Component tolerances

Component value tolerances are coded as shown in table 3.1A below.

B	C	D	F	G	J	K	M	N	V	X	Z	P	Q
±0.1	±.025	±0.5	±1	±2	±5	±10	±20	±30	+10 -10	+40 -20	+80 -20	+100 -0	+30 -10

table 3.1A Component tolerances

3.2 SERVICE PARTS LIST

SYMBOL No	PART No	PART NAME	DESCRIPTION	MODELS
CRTs				
⚠	255P917030	CRT	A51EFS43X09	1, 2, 3
⚠	255P930010	CRT	A59ECY13X01	4, 6, 8
⚠	H25P001010	CRT	A59ECF20X05	5, 7, 9
ICs				
IC101	270P255010	IC	STV8224	
IC201	270P254010	IC	MC44031	
IC202	263P053060	IC	TC4053BP/HEF4053BP	
IC351	270P258010	IC	TDA7253	
IC401	270P261010	IC	TDA8171	
IC501	270P355030	IC	MC7812CT	
IC551	272P406010	IC	TEA 2031A	4, 5, 6, 7, 8, 9
IC660	270P207010	IC-CRT-OUTPUT	TEA5101B	
IC701	274P681030	IC	ST9291N6B1NJ/A30	
IC702	274P684010	IC	ST24C04	
IC7701	274P571060	IC	SAA5281ZP/R	3, 8, 9
IC7702	274P570020	IC	PCB83C654P	3, 8, 9
IC7751	274P712020	IC	CF70195AF	2, 6, 7
IC7752	274P711010	IC	CF72306	2, 6, 7
IC901	272P514010	IC	TEA 2261	
IC951	270P260010	IC	TDA8137	
TRANSISTORS				
Q105	260P748030	TRANSISTOR	JC501-R	
Q106	260P749030	TRANSISTOR	JA101-Q	
Q107	260P749030	TRANSISTOR	JA101-Q	
Q108	260P749030	TRANSISTOR	JA101-Q	
Q201	260P748030	TRANSISTOR	JC501-R	
Q202	260P748030	TRANSISTOR	JC501-R	3, 8, 9
Q253	260P748030	TRANSISTOR	JC501-R	
Q254	260P748030	TRANSISTOR	JC501-R	
Q2V1	260P749030	TRANSISTOR	JA101-Q	
Q2V2	260P749030	TRANSISTOR	JA101-Q	
Q301	260P748030	TRANSISTOR	JC501-R	
Q302	260P748030	TRANSISTOR	JC501-R	
Q303	260P748030	TRANSISTOR	JC501-R	
Q310	260P748030	TRANSISTOR	JC501-R	
Q311	260P748030	TRANSISTOR	JC501-R	
Q312	260P748030	TRANSISTOR	JC501-R	
Q450	260P387010	TRANSISTOR	2SC2236-O,Y	
Q451	260P748030	TRANSISTOR	JC501-R	
Q501	260P748030	TRANSISTOR	JC501-R	
Q551	260P422010	TRANSISTOR	2SC2482	
Q552	260P794010	TRANSISTOR	BU2506	1, 2, 3
Q552	261P007010	TRANSISTOR	S2055N	4, 5, 6, 7, 8, 9
Q6E7	260P748030	TRANSISTOR	JC501-R	
Q6E8	260C255040	TRANSISTOR	2SA950-Y (FORMED)	
Q701	260C559050	TRANSISTOR	2SC1740S-E (FORMED)	
Q703	260P749030	TRANSISTOR	JA101-Q	
Q704	260P748030	TRANSISTOR	JC501-R	

1 = CT-21M5E 3 = CT-21M5RT 5 = CT-25M5EN 7 = CT-25M5ETN 9 = CT-25M5RTN
2 = CT-21M5ET 4 = CT-25M5E 6 = CT-25M5ET 8 = CT-25M5RT

SYMBOL No	PART No	PART NAME	DESCRIPTION	MODELS
Q705	260P749030	TRANSISTOR	JA101-Q	
Q706	260P749030	TRANSISTOR	JA101-Q	
Q707	260P748030	TRANSISTOR	JC501-R	
Q708	260P748030	TRANSISTOR	JC501-R	
Q709	260P748030	TRANSISTOR	JC501-R	
Q710	260P748030	TRANSISTOR	JC501-R	
Q711	260P748030	TRANSISTOR	JC501-R	
Q713	260P748030	TRANSISTOR	JC501-R	
Q714	260P748030	TRANSISTOR	JC501-R	
Q715	260P748030	TRANSISTOR	JC501-R	
Q7751	260P748030	TRANSISTOR	JC501-R	2, 6, 7
Q7752	260P748030	TRANSISTOR	JC501-R	2, 6, 7
Q901	261P006010	TRANSISTOR	S2000N	
Q902	260P748030	TRANSISTOR	JC501-R	
Q951	260P748030	TRANSISTOR	JC501-R	
Q952	260P387010	TRANSISTOR	2SC2236-O,Y	
Q953	260P748030	TRANSISTOR	JC501-R	
DIODES				
D104	264P370010	DIODE	1N4148	
D201	264P370010	DIODE	1N4148	
D251	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D252	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D253	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D254	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D255	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D256	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D257	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D258	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D301	264P370010	DIODE	1N4148	
D302	264P370010	DIODE	1N4148	
D303	264P370010	DIODE	1N4148	
D304	264P370010	DIODE	1N4148	
D401	264P374020	DIODE	1N4003ID	
D501	264P463020	DIODE	EQA02-08C/RD8.2 EB2	
D502	264P370010	DIODE	1N4148	
D503	264P371010	DIODE	BYV95B	
D504	264P371010	DIODE	BYV95B	
D505	264P375020	DIODE	BY228 (FORMED)	4, 5, 6, 7, 8, 9
D506	264P378020	DIODE	BYW96E (FORMED)	4, 5, 6, 7, 8, 9
D507	264P371010	DIODE	BYV95B	
D508	264P371010	DIODE	BYV95B	
D509	264P371010	DIODE	BYV95B	
D560	264P370010	DIODE	1N4148	4, 5, 6, 7, 8, 9
D561	264P493020	DIODE	RD39FB2	4, 5, 6, 7, 8, 9
D562	264P370010	DIODE	1N4148	4, 5, 6, 7, 8, 9
D563	264P370010	DIODE	1N4148	4, 5, 6, 7, 8, 9
D601	264P370010	DIODE	1N4148	
D655	264P370010	DIODE	1N4148	
D656	264P370010	DIODE	1N4148	
D657	264P370010	DIODE	1N4148	
D6A7	264P372010	DIODE	BYV96E	
D701	264P460020	DIODE	EQA02-05CD/RD5.1EB1	

1 = CT-21M5E 3 = CT-21M5RT 5 = CT-25M5EN 7 = CT-25M5ETN 9 = CT-25M5RTN
2 = CT-21M5ET 4 = CT-25M5E 6 = CT-25M5ET 8 = CT-25M5RT

SYMBOL No	PART No	PART NAME	DESCRIPTION	MODELS
D702	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D703	264P461070	DIODE	EQA02-06D/RD6.2EB2	
D704	264P370010	DIODE	1N4148	
D705	264P370010	DIODE	1N4148	
D706	264P465040	DIODE	EQA02-12AB/RD13EB1,B2	
D708	264P370010	DIODE	1N4148	
D709	264P370010	DIODE	1N4148	
D710	264P370010	DIODE	1N4148	
D7701	264P370010	DIODE	1N4148	3, 8, 9
D7751	264P682010	VARICAP DIODE	BB909A	2, 6, 7
D792	264P584020	DIODE LE	SML1216W-C,D	
D901	264P376010	DIODE	BYW56	
D902	264P376010	DIODE	BYW56	
D903	264P376010	DIODE	BYW56	
D904	264P376010	DIODE	BYW56	
D905	264P371010	DIODE	BYV95B	
D906	264P372010	DIODE	BYV96E	
D907	264P481060	DIODE	RD3.0FB2	
D908	264P370010	DIODE	1N4148	
D909	264P481060	DIODE	RD3.0FB2	
D951	264P378020	DIODE	BYW96E (FORMED)	
D952	264P377020	DIODE	BYW95B (FORMED)	
D953	264P377020	DIODE	BYW95B (FORMED)	
D955	264P461080	DIODE	EQA02-06E/RD6.2 EB3	
D956	266P010020	IC DIODE	μPC574J-K	
D957	264P464030	DIODE	EQA02-10A/RD10EB2	
FILTERS				
CF101	296P084010	CERAMIC-TRAP	TPS5.5MW	
CF102	296P024050	CERAMIC-TRAP	TPS6.5MB	
CF301	296P014020	CERAMIC-FILTER	5.5MHz	
CF302	296P014040	CERAMIC-FILTER	6.5MHz	
LC2V1	409P307010	FILTER-Y-C	DL400NS/BPF4.43	
SF101	296P138060	SAW-FILTER	38.9MHz	
COILS				
L101	325C165000	COIL-PEAKING	0.82μH-J	
L102	325C161030	COIL-PEAKING	10μH-K	
L104	323P175020	COIL-VIF	REFERENCE	
L106	325C121030	COIL-PEAKING	10μH-K	
L201	321C031040	COIL-RF	10μH-K	
L252	325C120010	COIL-PEAKING	1μH-M	
L253	325C120010	COIL-PEAKING	1μH-M	
L306	325C120070	COIL-PEAKING	3.3μH-K	
L307	325C120070	COIL-PEAKING	3.3μH-K	
L308	325C120070	COIL-PEAKING	3.3μH-K	
L309	325C120070	COIL-PEAKING	3.3μH-K	
L310	325C120070	COIL-PEAKING	3.3μH-K	
L312	325C120070	COIL-PEAKING	3.3μH-K	
L313	325C120070	COIL-PEAKING	3.3μH-K	
L314	325C120070	COIL-PEAKING	3.3μH-K	
L401	411P001070	LEAD-FERRITE		
L501	409P006080	COIL-FILTER	6800μH-J	

1 = CT-21M5E 3 = CT-21M5RT 5 = CT-25M5EN 7 = CT-25M5ETN 9 = CT-25M5RTN
2 = CT-21M5ET 4 = CT-25M5E 6 = CT-25M5ET 8 = CT-25M5RT

SYMBOL No	PART No	PART NAME	DESCRIPTION	MODELS
L502	321C030010	COIL-RF	1μH-K	
L503	411D009020	CORE-FERRITE		
L504	409P749010	COIL-PCC-CHOKE	15μH	4, 5, 6, 7, 8, 9
L505	409P748010	COIL-PCC	1μH	4, 5, 6, 7, 8, 9
L551	333P012010	COIL-HORIZ-LIN		4, 5, 6, 7, 8, 9
L551	333P012030	COIL-HORIZ-LIN		1, 2, 3
L701	325C121070	COIL PEAKING	22μH-K	
L702	325C121070	COIL PEAKING	22μH-K	
L7701	325C121030	COIL PEAKING	10μH-M	3, 8, 9
L7702	325C120070	COIL PEAKING	3.3μH-K	3, 8, 9
L7751	325C121030	COIL PEAKING	10μH-K	2, 6, 7
L7752	325C121030	COIL PEAKING	10μH-K	2, 6, 7
L7753	325C121030	COIL PEAKING	10μH-K	2, 6, 7
L7754	409P839010	TUNING COIL		2, 6, 7
L901	321C030050	COIL-RF	2.2μH-K	
L903	411P001070	LEAD-FERRITE		
L905	411P001070	LEAD-FERRITE		
L951	325D059060	COIL-PEAKING	390μH-K	
L991	351P047020	LINE-FILTER	Z85555TA	
L993	351P011020	LINE-FILTER		
⚠	409P564040	COIL-DEGAUSSING		4, 5, 6, 7, 8, 9
⚠	409P564060	COIL-DEGAUSSING		1, 2, 3
TRANSFORMERS				
⚠ T551	334P232020	TRANS-FLYBACK		1, 2, 3
⚠ T551	334P244010	TRANS-FLYBACK		4, 5, 6, 7, 8, 9
T552	336P017010	TRANS-HORIZ-DRIVE		
⚠ T901	350P664010	TRANS-POWER		
VARIABLE RESISTORS				
VR101	127C380080	VR-SEMIFIXED	1/5W B10K-M	
VR951	127C380080	VR-SEMIFIXED	1/5W B10K-M	1, 2, 3
VR951	127C380090	VR-SEMIFIXED	1/5W B20K-M	4, 5, 6, 7, 8, 9
RESISTORS				
⚠ R352	103P378060	R-FUSE	1/4W 3.3-J	
R508	102P243020	R-CEMENT-METAL-SUS	5W 3.9K-K/J	
R511	102P229010	R-CEMENT-WIRE-SUS	10W 8.2-K/J	
⚠ R512	103P442020	R-FUSE-METAL	1W 560-K/J	
⚠ R513	103P398040	R-FUSE	1/2W 2.2-J	
⚠ R514	103P397090	R-FUSE	1/2W 0.82-J	
⚠ R516	103P397090	R-FUSE	1/2W 0.82-J	
⚠ R671	103P447080	R-FUSE-METAL	1W 0.68-K/J	4, 6, 8
⚠ R671	103P448020	R-FUSE-METAL	1W 1.5-K/J	1, 2, 3, 5, 7, 9
R921	109D074010	R-CEMENT-METAL	5W 1.8K-K/J	
⚠ R981	109P913050	R-COMPOSITION	1/2W 6.8M-J	
⚠ R982	109P913050	R-COMPOSITION	1/2W 6.8M-J	
R991	102P087040	R-CEMENT-WIRE	10W 4.7-K	
CAPACITORS				
C509	172P171060	C-M-PLASTIC-PP	1600V 0.018 μF-J	4, 5, 6, 7, 8, 9
C5A3	172P942040	C-M-PLASTIC-PP	2000V 9100 pF-J	4, 5, 6, 7, 8, 9
C5B3	172P941030	C-M-PLASTIC-PP	2000V 3300 pF-J	4, 5, 6, 7, 8, 9

1 = CT-21M5E
2 = CT-21M5ET
3 = CT-21M5RT
4 = CT-25M5E
5 = CT-25M5EN
6 = CT-25M5ET
7 = CT-25M5ETN
8 = CT-25M5RT
9 = CT-25M5RTN

SYMBOL No	PART No	PART NAME	DESCRIPTION	MODELS
C5B3	172P942030	C-M-PLASTIC-PP	2000V 8200pF-J	1, 2, 3
C904	185D059040	C-ELECTROLYTIC	400V 150µF-M	
⚠ C981	189P091010	C-CERAMIC-AC	AC400V E4700pF-M	
⚠ C991	189P117030	C-M-POLYESTER-AC	AC275V 0.22µF-M	
SWITCHES				
S701	432P066010	SW-KEY-BOARD		
S702	432P066030	SW-KEY-BOARD		
S703	432P066030	SW-KEY-BOARD		
S704	432P066030	SW-KEY-BOARD		
S705	432P066030	SW-KEY-BOARD		
⚠ S991	432C048010	SW-PUSH	AC250V 5A/80A	
MISCELLANEOUS				
⚠ F991	283D047040	FUSE	T2A	
J251	452C080020	21 PIN-SCART		
J252	452C080020	21 PIN-SCART		
⚠ J601	449C126010	CRT SOCKET		
⚠ PC951	268P068010	PHOTO COUPLER	TCDT1124G	
⚠ RP991	265P071050	POSISTOR	PTH451C41BG180N	
TU101	295P430020	TUNER-TV	UV1315/IEC	
X601	285P142020	QUARTZ-CRYSTAL	17.734475MHz	
X701	285P139040	QUARTZ-CRYSTAL	12MHz	
X7701	285P157010	QUARTZ-CRYSTAL	27MHz/SAA5246	3, 8, 9
X7751	285P062030	QUARTZ-CRYSTAL	13.875MHz	2, 6, 7
⚠ Z552	299P193010	PROTECTOR	2000	4, 5, 6, 7, 8, 9
Z792	939P580010	UNIT-PREAMP		
⚠ Z951	299P193000	PROTECTOR	1600	
⚠ Z952	299P193010	PROTECTOR	2000	
PCB ASSEMBLIES				
⚠	920A414011	ASSY-PWB-MAIN		1
⚠	920A414012	ASSY-PWB-MAIN		2
⚠	920A414013	ASSY-PWB-MAIN		3
⚠	920A417009	ASSY-PWB-MAIN		4
⚠	920A417010	ASSY-PWB-MAIN		6
⚠	920A417011	ASSY-PWB-MAIN		8
⚠	920A432009	ASSY-PWB-MAIN		5
⚠	920A432010	ASSY-PWB-MAIN		7
⚠	920A432011	ASSY-PWB-MAIN		9
⚠	930C899004	ASSY-PWB-VM/CRT		1, 2, 3
⚠	930C899005	ASSY-PWB-VM/CRT		4, 6, 8
⚠	930C899015	ASSY-PWB-VM/CRT		5, 7, 9
⚠	930C900003	ASSY-PWB-PWR-SUB		
⚠	930C901002	ASSY-PWB-LED		
⚠	930C915002	ASSY-PWB-TEXT		3, 8, 9
⚠	930C938002	ASSY-PWB-UNITEXT		2, 6, 7
⚠	MELC534002	ASSY-PWB-DELAY		1, 3, 4, 5, 8, 9
⚠	MELC534003	ASSY-PWB-DELAY		2, 6, 7

1 = CT-21M5E 3 = CT-21M5RT 5 = CT-25M5EN 7 = CT-25M5ETN 9 = CT-25M5RTN
2 = CT-21M5ET 4 = CT-25M5E 6 = CT-25M5ET 8 = CT-25M5RT

SYMBOL No	PART No	PART NAME	DESCRIPTION	MODELS
MECHANICAL AND COSMETIC				
⚠	246C022070	AC-POWER-CORD/PLUG		
	669D218070	SCREW M5x30	CRT FIXING	
	669D220030	SCREW M3x10		
	669D221040	SCREW M4x12		
	669D221060	SCREW M4x16	BACK COVER FIXING	
⚠	700C603020	ASSY-BACK-COVER		1
⚠	700C603030	ASSY-BACK-COVER		2
⚠	700C604020	ASSY-BACK-COVER		6
⚠	700C604030	ASSY-BACK-COVER		4
⚠	700C608000	ASSY-BACK-COVER		3
⚠	700C608010	ASSY-BACK-COVER		8
⚠	700C608020	ASSY-BACK-COVER		5
⚠	700C608030	ASSY-BACK-COVER		7
⚠	700C608040	ASSY-BACK-COVER		9
	701D601060	ASSY-CABINET		1
	701D601070	ASSY-CABINET		2
	701D604090	ASSY-CABINET		4, 5
	701D605000	ASSY-CABINET		6, 7
	701D608000	ASSY-CABINET		3
	701D608020	ASSY-CABINET		8, 9
	752C600020	ASSY-DOOR		1, 2, 3, 4, 5
	752C600030	ASSY-DOOR		6, 7, 8, 9
	754C600020	ASSY-BUTTON-POWER		1, 2, 3
	754C600040	ASSY-BUTTON-POWER		4, 5, 6, 7, 8, 9
	761C437010	DOOR-CATCH		
PACKING AND ACCESSORIES				
	290P054050	TRANSMITTER-REMOCON		
	801C284020	PACKING-CASE		1, 2, 3
	801C285020	PACKING-CASE		4, 5, 6, 7, 8, 9
	803A342010	CUSHION-SET		1, 2, 3
	803A354010	CUSHION SET		4, 5, 6, 7, 8, 9
	831D296020	PACKING-BAG		1, 2, 3
	831D296030	PACKING-BAG		4, 5, 6, 7, 8, 9
	871C601060	SERVICE MANUAL		
	872C123000	IB-COLOUR		1, 2, 4, 5, 6, 7
	872C124050	IB-COLOUR		3, 8, 9

1 = CT-21M5E 3 = CT-21M5RT 5 = CT-25M5EN 7 = CT-25M5ETN 9 = CT-25M5RTN
2 = CT-21M5ET 4 = CT-25M5E 6 = CT-25M5ET 8 = CT-25M5RT

4 SCHEMATIC DIAGRAMS

4.1 SERVICING PRECAUTIONS

The ⚠ symbol indicates components with characteristics critical to safety and performance.
These parts **must** only be replaced with parts having identical values and characteristics – refer to the Service Parts List for the correct Mitsubishi part numbers.

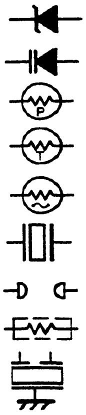
Do not compromise the safety of the receiver by improper servicing.

4.2 GENERAL NOTES

- DC voltages are measured from the points indicated to circuit ground.
- Waveforms are for a PAL colour bar signal.
- Test Points are shown as: "TP6A", etc.
- This is a basic circuit diagram – receivers are subject to modification due to continuous engineering improvement.

4.3 COMPONENT INFORMATION

SPECIFIC SYMBOLS



Zener diode
Varicap
Posistor
Thermistor
Fusible resistor
Crystal
Air gap
Part (e.g. resistor) on copper side of PCB
Ceramic filter

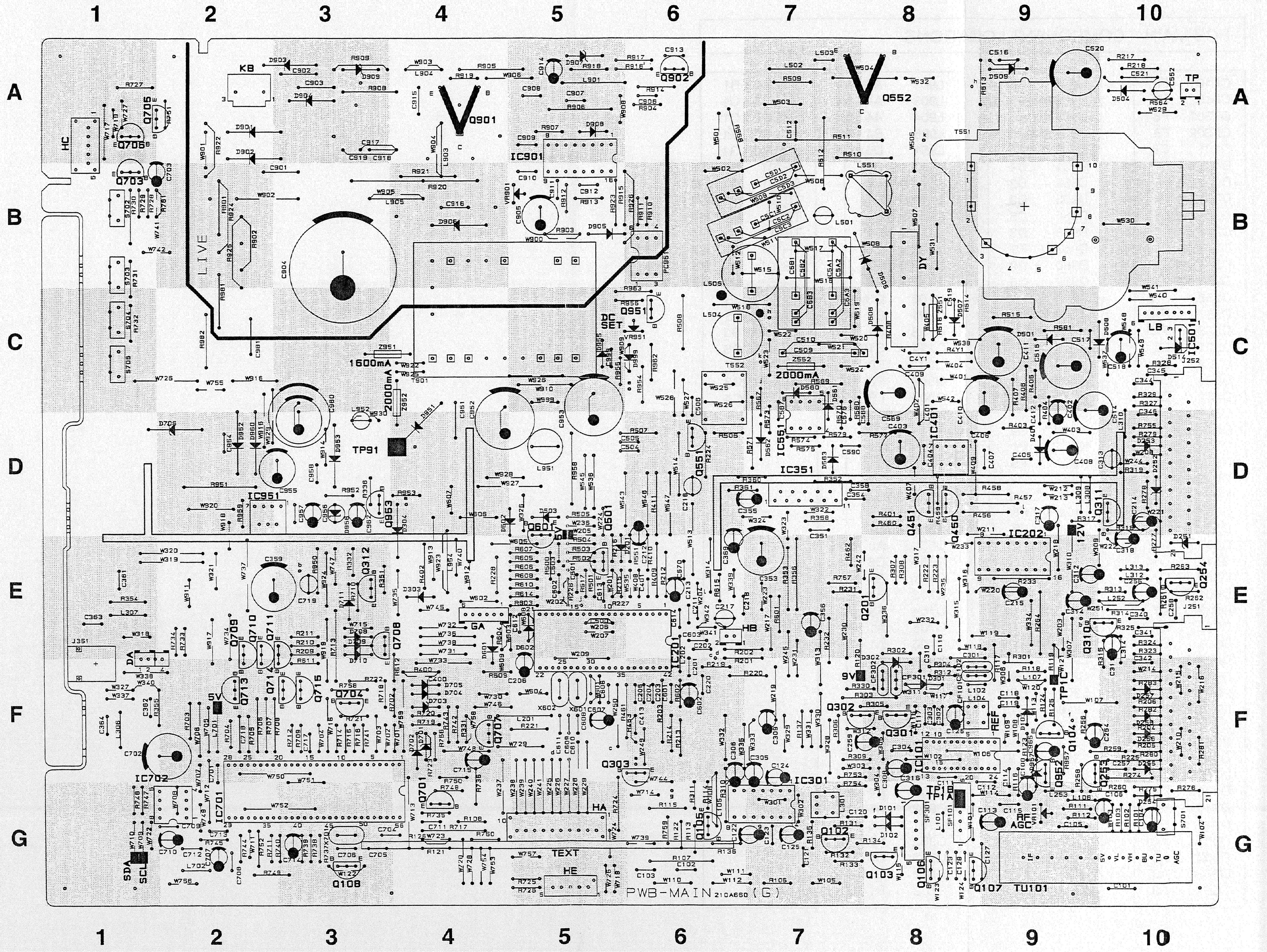
RESISTORS

Value	without spec.	Ω, K = KΩ, M = MΩ
Wattage	without spec.	1/4W or 1/6W (chips: 1/10W)
Tolerance	without spec.	±5%
	D = ±0.5%, F = ±1%, J = ±5%, K = ±10%,	
Type	without spec.	Carbon film
	(S)	Composition
	(MB)	Metal oxide film
	(CE)	Cemented
	(W)	Wire wound
	(M)	Metal film
	(MPC)	Metal plate cement
	(ML)	Metal linear

CAPACITORS

Value	without spec.	pF for values >1, µF for values <1
Voltage	without spec.	50V
Tolerance	without spec.	electrolytic: ±20%, others ±10%
	G = ±2%, J = ±5%, K = ±10%, M = ±20%, P = +100 –0%, Z = +80 –20%, Q = +30 –10%, T = +200 –0%, C = ±0.25pF, D = ±0.5, F = ± 1pF, G = ±2pF	
Type	without spec.	Ceramic
	(MF)	Polyester
	(PP)	Polypropylene film
	(ALM)	Aluminus electrolytic
	(TF)	Twin film
	(SC)	Semiconductor ceramic
	(MP)	Metalised paper
	(MPP)	Metalised plastic film
	(MMF)	Metalised polyester
	(MF.PP)	Polyester/polypropylene film
	(PS)	Polystyrene (styrol)
	(TAN) or (TANT)	Tantalum
	—+⊣⊢—	Electrolytic
	(BP) or (NP)	Non-polarised electrolytic
Characteristic	(only ceramic capacitors)	
	without spec.	B or F (high dielectric)
	CH, SL, etc.	Temperature compensating types

PCB-MAIN

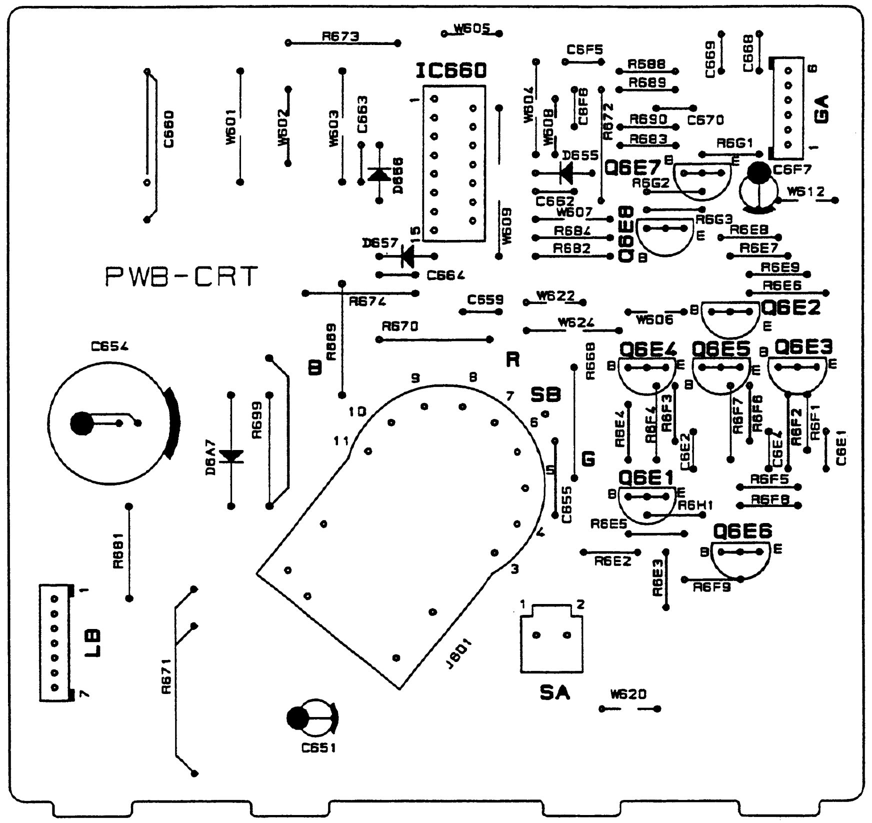

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
HC
KB
LIVE
Q901
Q902
Q552
Q705
Q706
Q703
IC901
T551
L551
DY
LB
IC501
TP
1600mA
2000mA
TP91
Z951
Z952
Z552
T552
DC SET
Q951
IC951
Q953
IC351
IC551
IC401
Q451
Q450
IC202
Q311
Q601
Q501
Q312
Q709
Q710
Q711
Q708
Q713
Q714
Q715
Q704
Q707
Q701
Q201
Q254
Q310
Q302
Q301
Q303
IC301
IC101
Q104
Q952
Q253
Q105
Q102
Q103
Q106
Q107
Q108
IC201
IC701
IC702
J351
J251
J252
DA
GA
HA
HB
HE
TEXT
5V
9V
12V
SDA
SCL
REF
TP1C
TP1B
TP1A
RF AGC
TU101
IF
5V
VL
VH
BU
TU
AGC
PWB-MAIN 210A660 (G)

PCB MAIN – COMPONENT LOCATIONS

CF101	F8
CF102	F8
CF301	F8
CF302	F8
D101	G8
D102	G8
D103	F9
D201	E6
D251	E10
D252	D10
D253	D10
D254	G10
D255	F10
D256	F10
D257	F10
D258	F10
D301	F8
D303	E4
D304	D4
D401	D9
D501	C9
D502	D4
D503	D5
D504	A10
D505	B8
D506	C8
D507	C8
D508	C10
D509	A9
D514	C10
D560	C7
D561	C7
D562	D7
D563	D7
D601	E4
D602	E5
D701	F4
D702	F4
D703	F4
D704	F4
D705	F4
D706	D2
D708	E3
D709	E3
D710	E3
D711	E3
D901	A2
D902	A2
D903	A3
D904	A3
D905	B5
D906	B4
D907	A5
D908	A5
D909	A3
D951	D4
D952	D2
D953	D3
D955	C5
D956	D3
D957	F9
D960	D2
D999	C6
IC101	F8
IC201	E6
IC202	E9
IC301	G7
IC351	D7
IC401	D8
IC501	C10
IC551	D7
IC701	G2
IC702	F1
IC901	A5
IC951	D2
L101	G8
L102	F8
L104	F8
L105	G6
L106	G9
L107	F9
L201	F5
L252	E10
L253	G9
L306	F1
L307	E1
L308	D9
L309	D9
L310	D10
L312	E10
L313	E10
L314	E10
L401	D8
L501	B7
L502	A7
L503	A7
L504	C6
L505	B6
L701	F2
L702	G2
L901	A5
L903	A4
L904	A4
L905	B4
L951	D5
L952	C3
L954	E4
Q102	G7
Q103	G8
Q104	F9
Q105	G6
Q106	G8
Q107	G8
Q108	G3
Q201	E8
Q253	F9
Q254	E10
Q301	F8
Q302	F7
Q303	F6
Q310	E9
Q311	D10
Q312	E3
Q450	D8
Q451	D8
Q501	D5
Q501	E5
Q551	D6
Q552	A8
Q601	D5
Q701	G4
Q703	B1
Q704	F3
Q705	A1
Q706	A1
Q707	F4
Q708	E3
Q709	E2
Q710	E2
Q711	E3
Q713	F2
Q714	F3
Q715	F3
Q901	A4
Q902	A6
Q951	C6
Q952	F9
Q953	D3
S701	G10
S702	B1
S703	B1
S704	C1
S705	C1
SCL	G1
SDA	G1
SF101	G8
SF301	G8
TP1A	G8
TP1B	G8
TP91	D3
VR101	G9
VR901	B5
VR951	C6
X601	F5
X602	F5
X701	G3
Z551	C8
Z552	C7
Z951	C3
Z952	C4

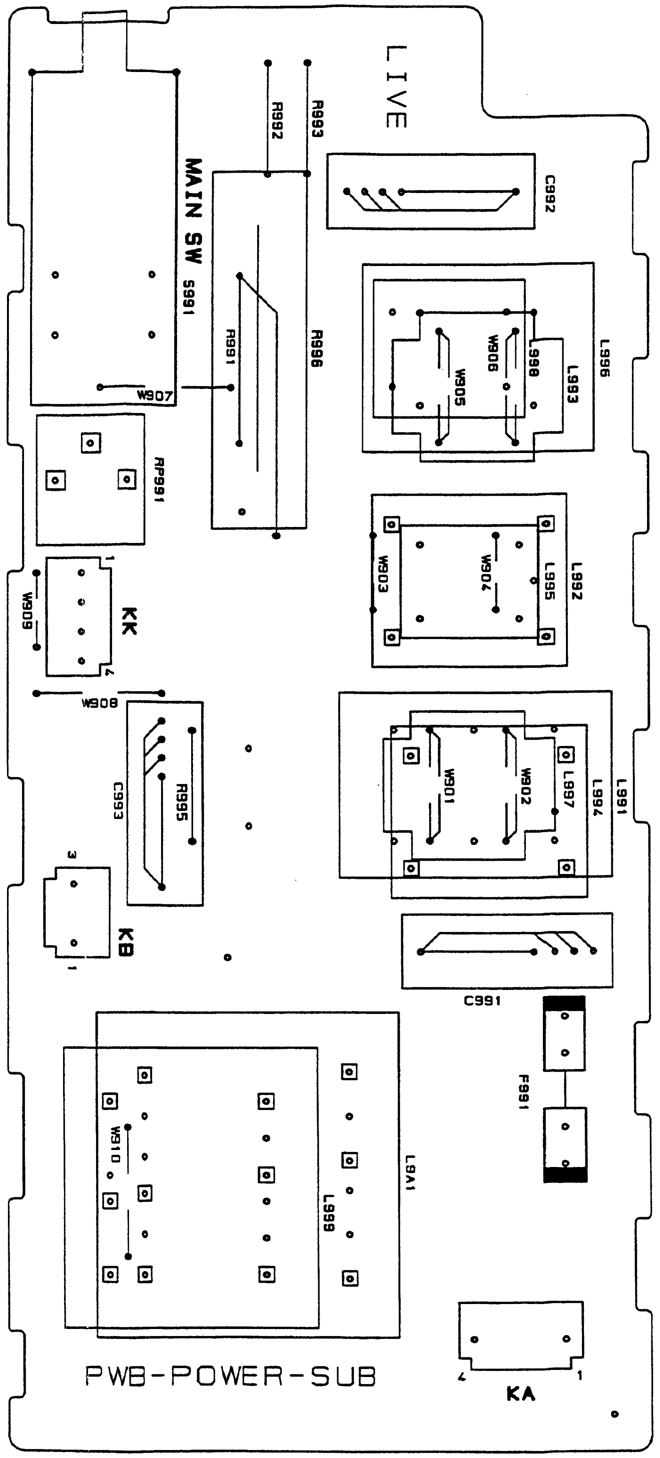
PCB CRT

- IC660
- Q6E1
- Q6E2
- Q6E3
- Q6E4
- Q6E5
- Q6E6
- Q6E7
- Q6E8
- D655
- D656
- D657
- D6A7
- R671
- R671
- J601


PWB-CRT
IC660
Q6E1
Q6E2
Q6E3
Q6E4
Q6E5
Q6E6
Q6E7
Q6E8
D655
D656
D657
D6A7
R671
J601
C654
C651
LB
GA
SA
SB
R
G
B

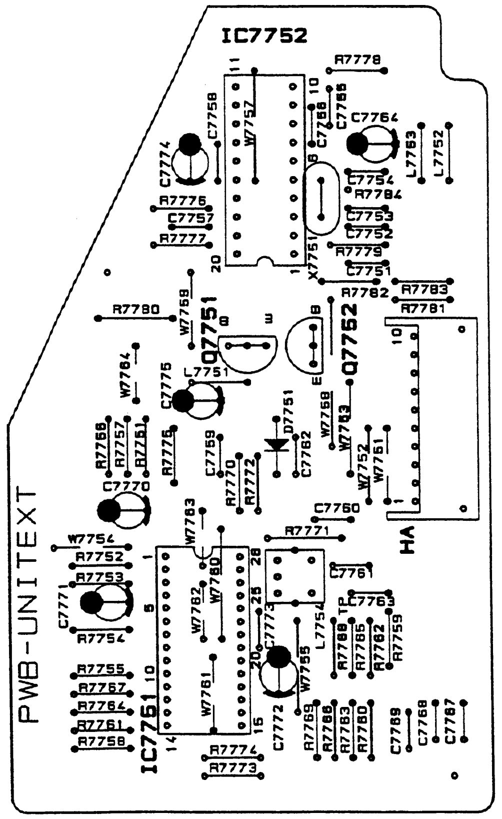
PCB POWER SUB

- RP991
- L991
- L992
- L993
- L994
- L995
- L996
- L997
- L998
- R991
- C991
- C993
- S991
- F991


PWB-POWER-SUB
LIVE
MAIN SW
S991
RP991
C991
C992
C993
F991
KK
KB
KA
L991
L992
L993
L994
L995
L996
L997
L998
L9A1

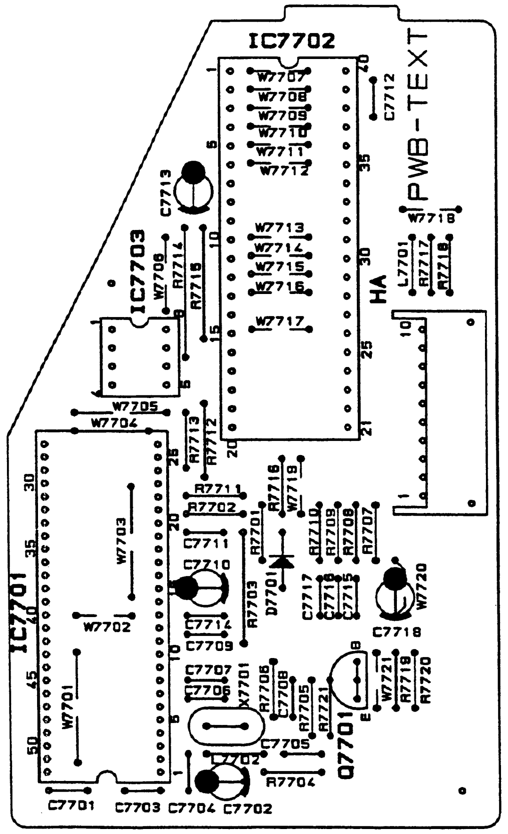
PCB UNITEXT

- IC7751
- IC7752
- Q7751
- Q7752
- D7751
- L7751
- L7752
- L7753
- L7754
- X7751


PWB-UNITEXT
IC7751
IC7752
Q7751
Q7752
D7751
L7751
X7751
HA

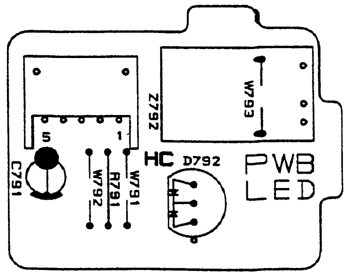
PCB TEXT

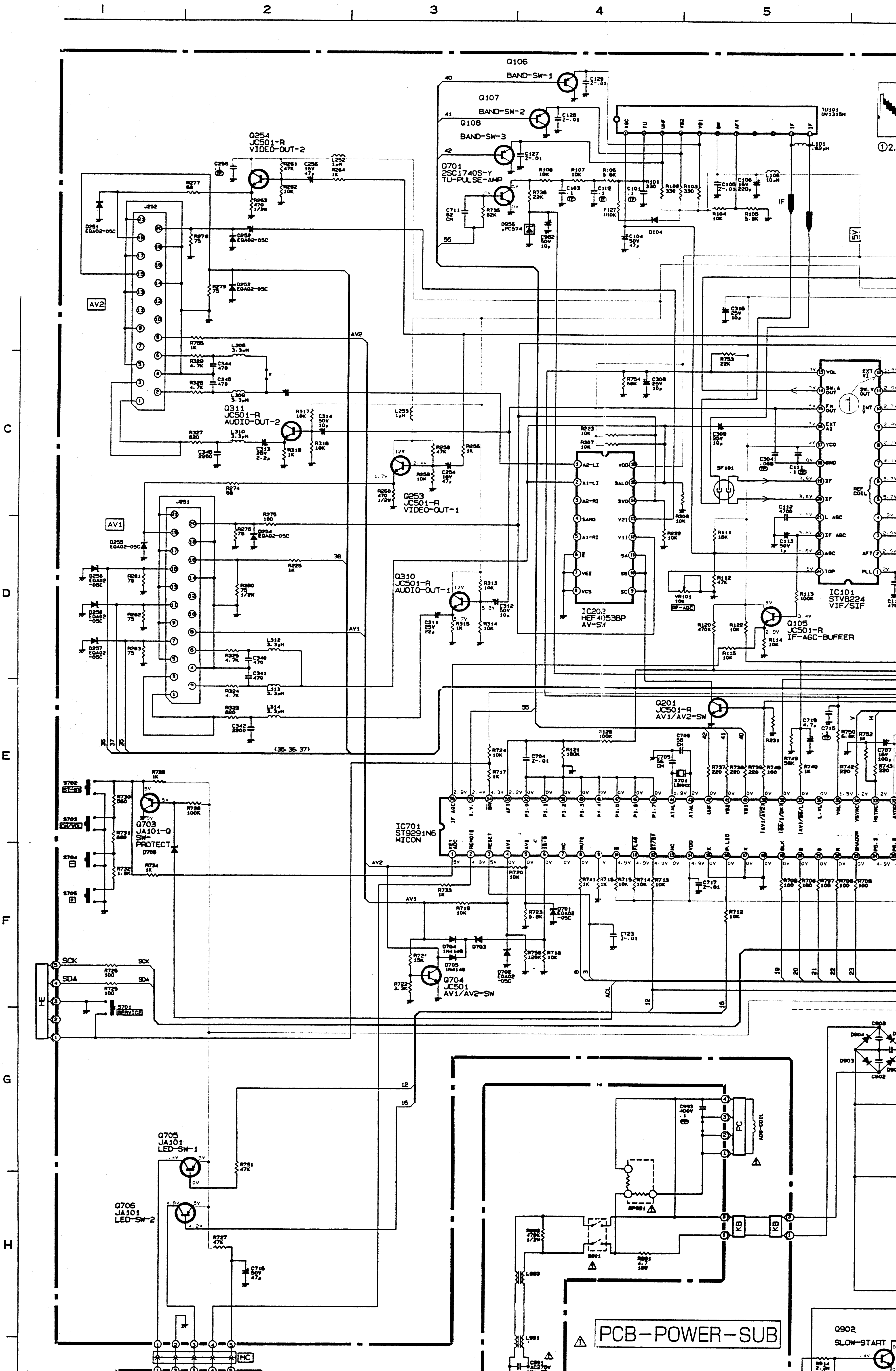
- IC7701
- IC7702
- Q7701
- D7701
- L7701
- L7702
- X7701

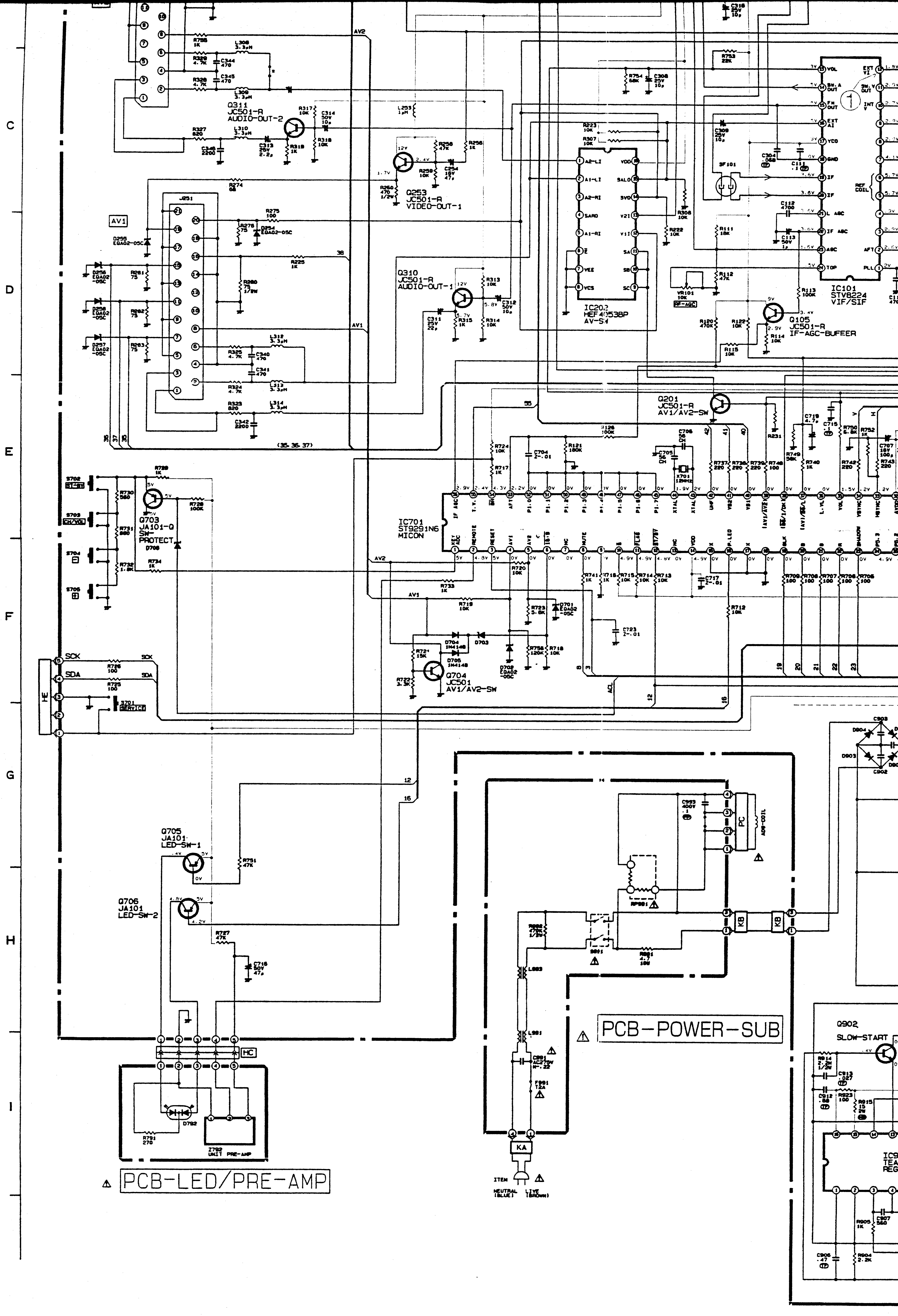

PWB-TEXT
IC7701
IC7702
IC7703
Q7701
D7701
X7701
HA

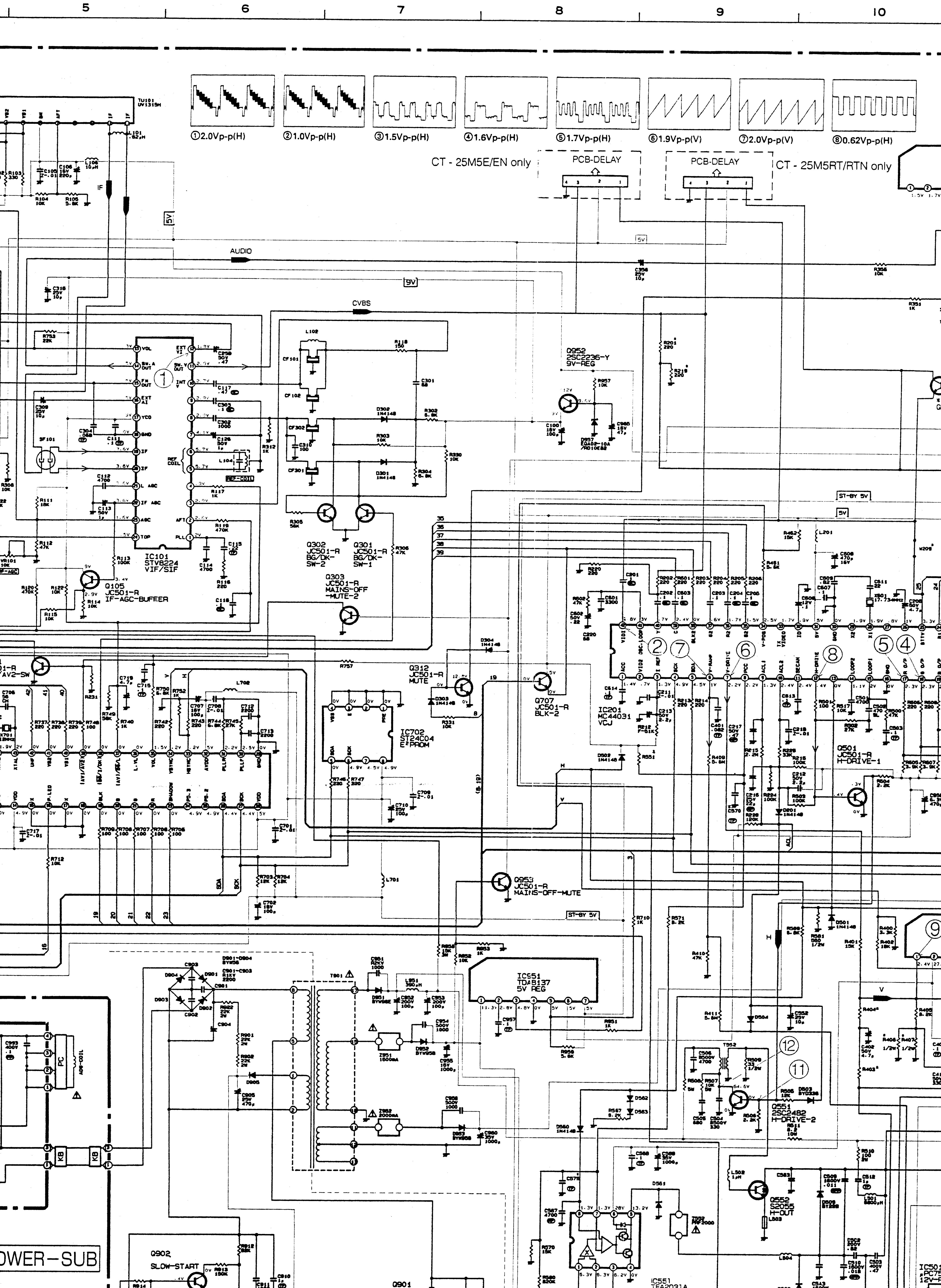
PCB LED

- D792
- Z792

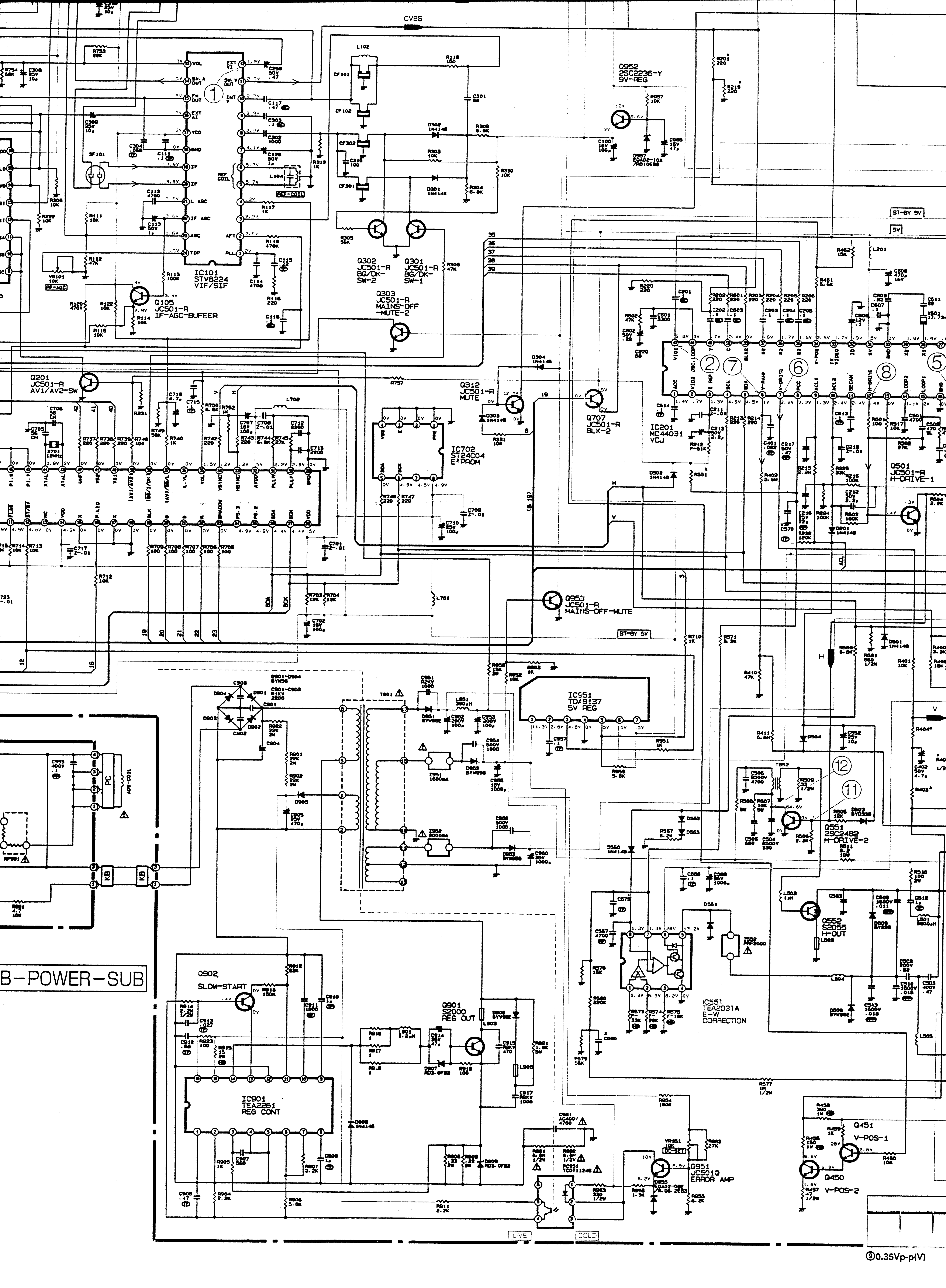

PWB LED
D792
Z792
C791
HC


1
2
3
4
5
C
D
E
F
G
H
Q106
BAND-SW-1
Q107
BAND-SW-2
Q108
BAND-SW-3
Q701
2SC1740S-Y
TU-PULSE-AMP
TU101
UV1315H
Q254
JC501-R
VIDEO-OUT-2
AV2
J252
D251
EGA02-05C
D252
EGA02-05C
D253
EGA02-05C
Q311
JC501-R
AUDIO-OUT-2
Q253
JC501-R
VIDEO-OUT-1
AV1
J251
Q310
JC501-R
AUDIO-OUT-1
IC202
HEF4053BP
AV-SW
IC101
STV8224
VIF/SIF
SF101
Q105
JC501-R
IF-AGC-BUFEER
VR101
RF-AGC
REF COIL
Q201
JC501-R
AV1/AV2-SW
IC701
ST9291N6
MICON
X701
12MHz
S702
ST-BY
S703
CH/VOL
S704
S705
Q703
JA101-Q
SW-PROTECT
D708
Q704
JC501
AV1/AV2-SW
D704
1N4148
D705
1N4148
D703
D702
EGA02-05C
D701
EGA02-05C
HE
SCK
SDA
S701
SERVICE
Q705
JA101
LED-SW-1
Q706
JA101
LED-SW-2
HC
PC
ADG-COIL
KB
RP901
S901
L903
L901
C901
PCB-POWER-SUB
Q902
SLOW-START
5V
IF
(35.36.37)
①2.


C
D
E
F
G
H
I
AV1
AV2
J251
Q311 JC501-R AUDIO-OUT-2
Q253 JC501-R VIDEO-OUT-1
Q310 JC501-R AUDIO-OUT-1
IC202 HEF4053BP AV-SW
IC101 STV8224 VIF/SIF
Q105 JC501-R IF-AGC-BUFEER
SF101
REF COIL
VR101 RF-AGC
Q201 JC501-R AV1/AV2-SW
IC701 ST9291N6 MICON
X701
S702 ST-BY
S703 CH/VOL
S704
S705
Q703 JA101-Q SW-PROTECT
D708
Q704 JC501 AV1/AV2-SW
HE
SCK
SDA
S701 SERVICE
Q705 JA101 LED-SW-1
Q706 JA101 LED-SW-2
HC
D792
R791 270
Z792 UNIT PRE-AMP
PCB-LED/PRE-AMP
PC
ADG-COIL
RP901
S901
KB
L903
L901
C901 AC275V
F901 T2A
KA
ITEM
NEUTRAL (BLUE)
LIVE (BROWN)
PCB-POWER-SUB
Q902 SLOW-START
D904
D903
C903
C902

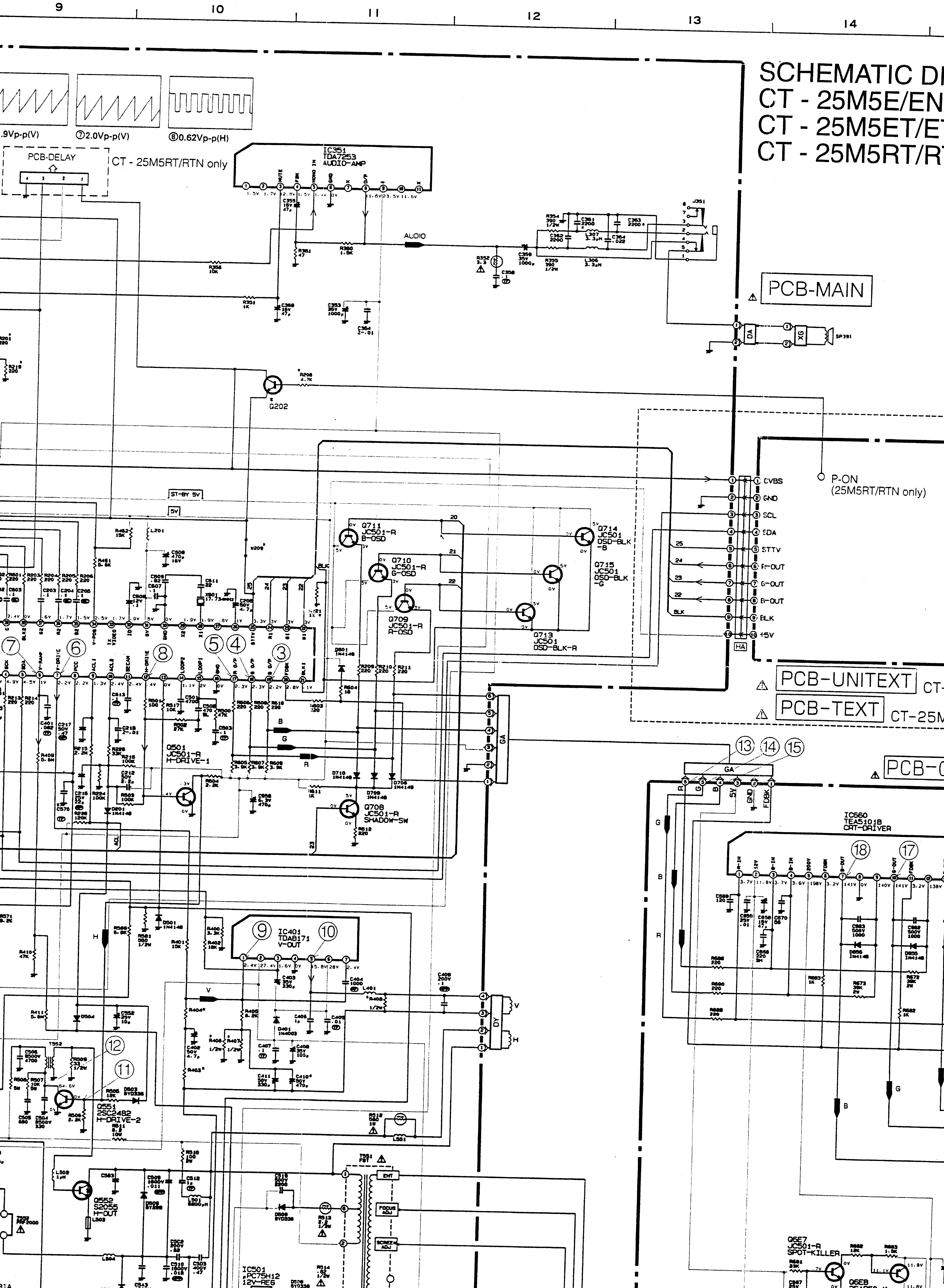


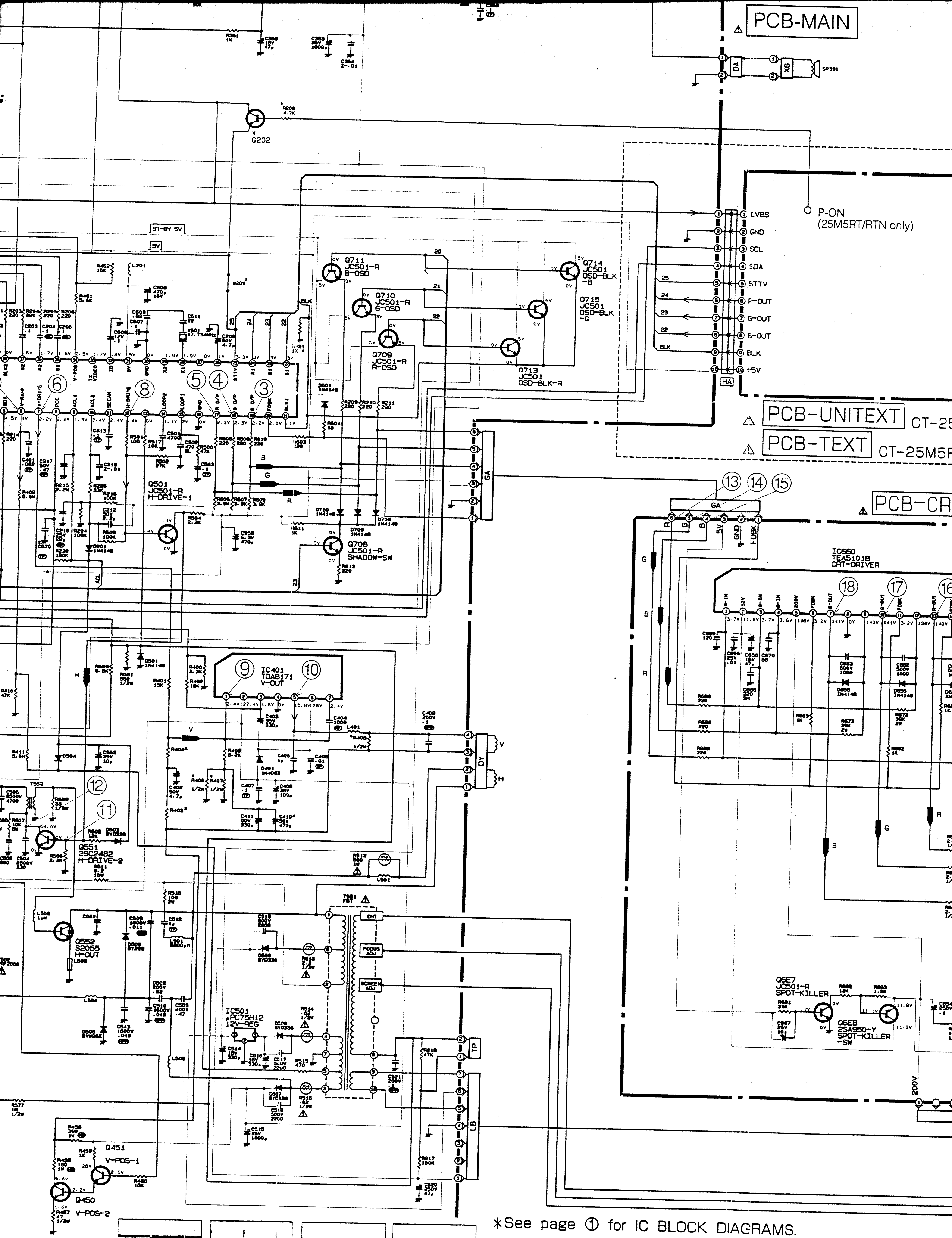
5
6
7
8
9
10
①2.0Vp-p(H)
②1.0Vp-p(H)
③1.5Vp-p(H)
④1.6Vp-p(H)
⑤1.7Vp-p(H)
⑥1.9Vp-p(V)
⑦2.0Vp-p(V)
⑧0.62Vp-p(H)
CT - 25M5E/EN only
PCB-DELAY
PCB-DELAY
CT - 25M5RT/RTN only
TU101 UV1315H
IF
AUDIO
5V
9V
CVBS
ST-BY 5V
Q952 2SC2236-Y 9V-REG
D957 EQA02-10A /RD10EB2
IC101 STV8224 VIF/SIF
REF-COIL
SF101
Q105 JC501-R IF-AGC-BUFEER
Q302 JC501-R BG/DK-SW-2
Q301 JC501-R BG/DK-SW-1
Q303 JC501-R MAINS-OFF -MUTE-2
Q312 JC501-R MUTE
Q707 JC501-R BLK-2
IC702 ST24C04 E²PROM
IC201 MC44031 VCJ
Q501 JC501-R H-DRIVE-1
Q953 JC501-R MAINS-OFF-MUTE
IC551 TDA8137 5V REG
T901
T552
Q551 2SC2482 H-DRIVE-2
Q552 S2055 H-OUT
IC551 TEA2031A
Q902 SLOW-START
Q901
OWER-SUB
PC
KB
ADG-COIL
SDA
SCK
H
V
ACL
(8.19)


CVBS
IC101
STV8224
VIF/SIF
Q105
JC501-R
IF-AGC-BUFEER
SF101
REF COIL
RF-AGC
Q302
JC501-R
BG/DK-
SW-2
Q301
JC501-R
BG/DK-
SW-1
Q303
JC501-R
MAINS-OFF
-MUTE-2
Q952
2SC2236-Y
9V-REG
ST-BY 5V
5V
Q201
JC501-R
AV1/AV2-SW
X701
12MHZ
Q312
JC501-R
MUTE
Q707
JC501-R
BLK-2
IC702
ST24C04
E²PROM
IC201
MC44031
VCJ
Q501
JC501-R
H-DRIVE-1
Q953
JC501-R
MAINS-OFF-MUTE
IC551
TDA8137
5V REG
T901
Z951
1600mA
Z952
2000mA
PC
ADS-COIL
RP901
KB
B-POWER-SUB
Q902
SLOW-START
IC901
TEA2261
REG CONT
Q901
S2000
REG OUT
Q951
JC501Q
ERROR AMP
PC951
TCDT1124G
LIVE
COLD
T552
Q551
2SC2482
H-DRIVE-2
Q552
S2055
H-OUT
IC551
TEA2031A
E-W
CORRECTION
Q451
V-POS-1
Q450
V-POS-2
H
V
①
②
⑤
⑥
⑦
⑧
⑪
⑫

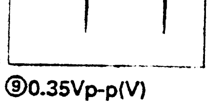
⑨0.35Vp-p(V)

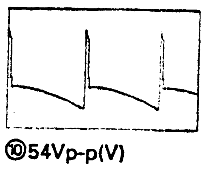
SCHEMATIC DI
CT - 25M5E/EN
CT - 25M5ET/E
CT - 25M5RT/R

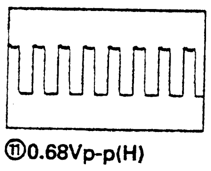

9
10
11
12
13
14
.9Vp-p(V)
⑦2.0Vp-p(V)
⑧0.62Vp-p(H)
PCB-DELAY
CT - 25M5RT/RTN only
IC351
TDA7253
AUDIO-AMP
MUTE
FBK
MONO IN
GND
O/P
AUDIO
J351
PCB-MAIN
DA
XG
SP391
Q202
Q711
JC501-R
B-OSD
Q710
JC501-R
G-OSD
Q709
JC501-R
R-OSD
Q714
JC501
OSD-BLK
-B
Q715
JC501
OSD-BLK
-G
Q713
JC501
OSD-BLK-R
ST-BY 5V
5V
P-ON
(25M5RT/RTN only)
CVBS
GND
SCL
SDA
STTV
R-OUT
G-OUT
B-OUT
BLK
+5V
HA
PCB-UNITEXT
PCB-TEXT
CT-25M
Q501
JC501-R
H-DRIVE-1
Q708
JC501-R
SHADOW-SW
GA
⑬ ⑭ ⑮
PCB-C
IC660
TEA5101B
CRT-DRIVER
⑱ ⑰
IC401
TDA8171
V-OUT
⑨ ⑩
DY
V
H
T552
⑫
⑪
Q551
2SC2482
H-DRIVE-2
Q552
S2055
H-OUT
T551
FBT
EHT
FOCUS ADJ
SCREEN ADJ
IC501
µPC75H12
12V-REG
Q6E7
JC501-R
SPOT-KILLER
Q6E8
⑦ ⑥ ⑤ ④ ③ ⑧

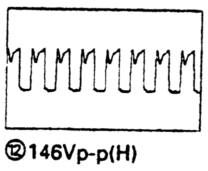

PCB-MAIN
SP391
DA
XG
Q202
R208 4.7K
P-ON
(25M5RT/RTN only)
CVBS
GND
SCL
SDA
STTV
R-OUT
G-OUT
B-OUT
BLK
+5V
HA
ST-BY 5V
5V
Q711 JC501-R B-OSD
Q710 JC501-R G-OSD
Q709 JC501-R R-OSD
Q714 JC501 OSD-BLK-B
Q715 JC501 OSD-BLK-G
Q713 JC501 OSD-BLK-R
PCB-UNITEXT CT-25
PCB-TEXT CT-25M5R
V-RAMP
V-DRIVE
PCC
ACL1
ACL2
BECAM
H-DRIVE
LOOP2
LOOP1
GND
R O/P
G O/P
B O/P
FDBK
BLK1
Q501 JC501-R H-DRIVE-1
Q708 JC501-R SHADOW-SW
GA
PCB-CR
IC660 TEA5101B CRT-DRIVER
R-IN
12V
G-IN
B-IN
200V
FDBK
B-OUT
G-OUT
R-OUT
IC401 TDA8171 V-OUT
DY
V
H
T552
Q551 2SC2482 H-DRIVE-2
Q552 S2055 H-OUT
T551 FBT
EHT
FOCUS ADJ
SCREEN ADJ
IC501 μPC75H12 12V-REG
TP
LB
Q451 V-POS-1
Q450 V-POS-2
Q6E7 JC501-R SPOT-KILLER
Q6E8 2SA950-Y SPOT-KILLER-SW
200V

*See page ① for IC BLOCK DIAGRAMS.


⑨0.35Vp-p(V)


⑩54Vp-p(V)

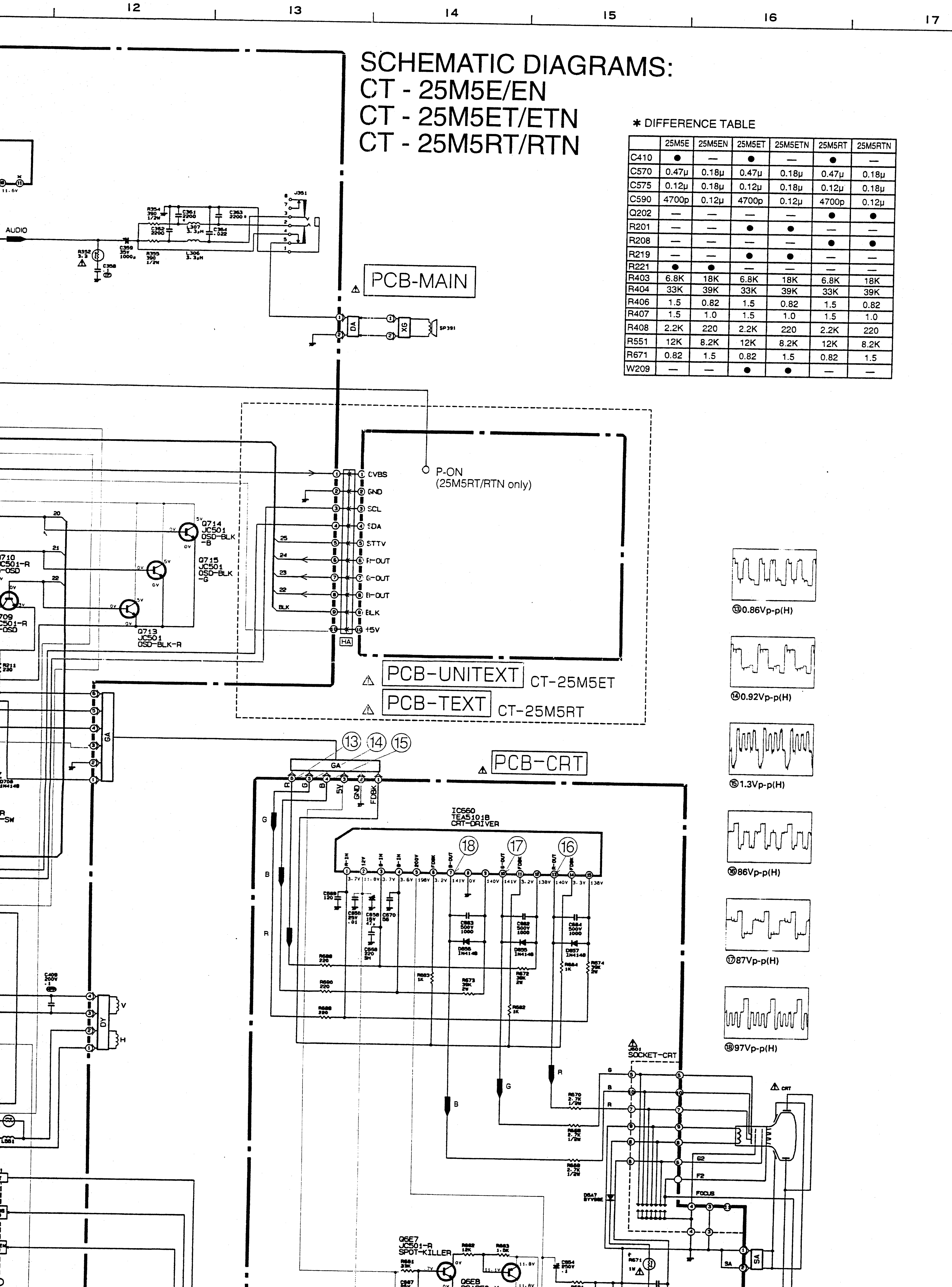

⑪0.68Vp-p(H)


⑫146Vp-p(H)

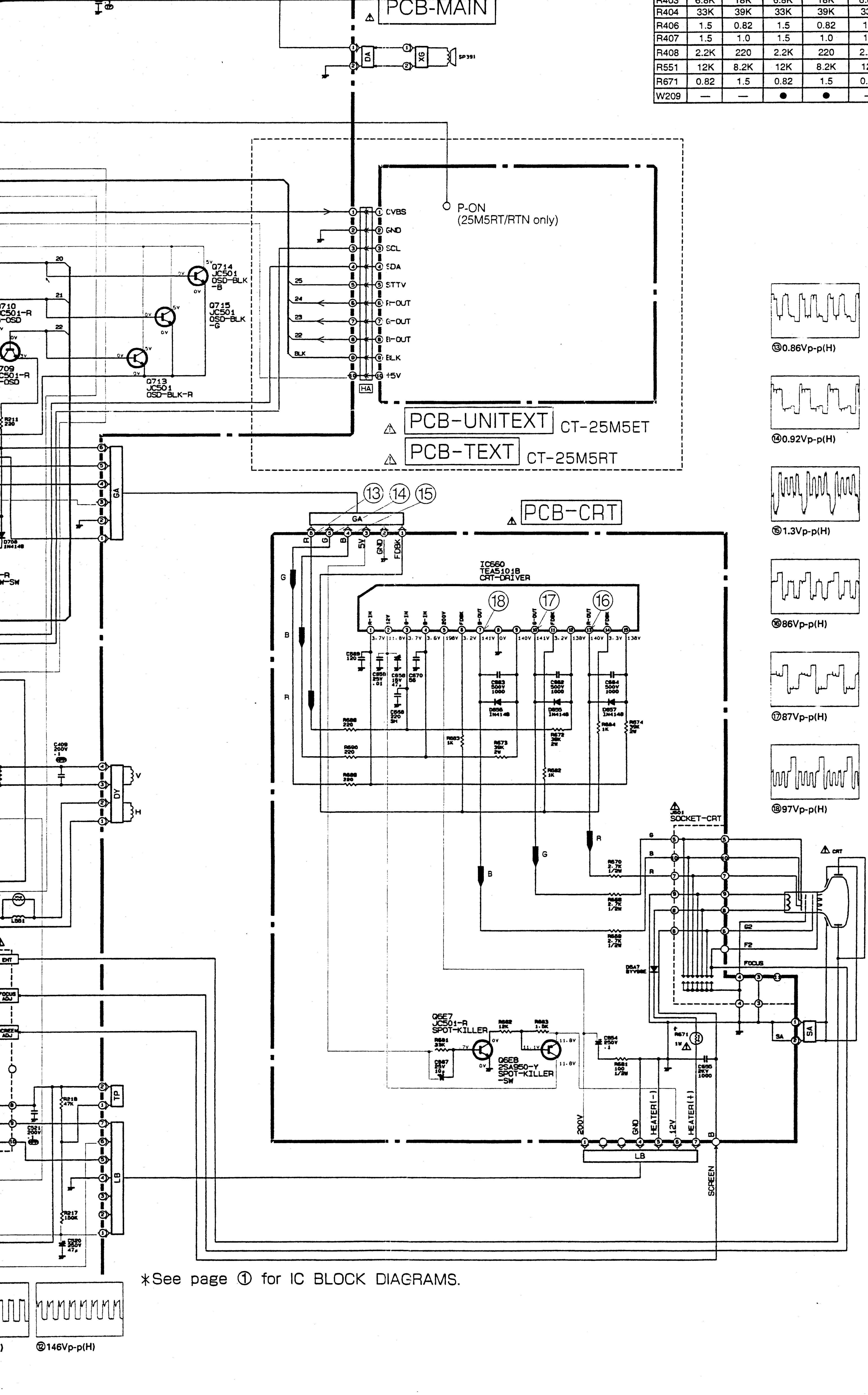
SCHEMATIC DIAGRAMS:
CT - 25M5E/EN
CT - 25M5ET/ETN
CT - 25M5RT/RTN

✱ DIFFERENCE TABLE

	25M5E	25M5EN	25M5ET	25M5ETN	25M5RT	25M5RTN
C410	●	—	●	—	●	—
C570	0.47μ	0.18μ	0.47μ	0.18μ	0.47μ	0.18μ
C575	0.12μ	0.18μ	0.12μ	0.18μ	0.12μ	0.18μ
C590	4700p	0.12μ	4700p	0.12μ	4700p	0.12μ
Q202	—	—	—	—	●	●
R201	—	—	●	●	—	—
R208	—	—	—	—	●	●
R219	—	—	●	●	—	—
R221	●	●	—	—	—	—
R403	6.8K	18K	6.8K	18K	6.8K	18K
R404	33K	39K	33K	39K	33K	39K
R406	1.5	0.82	1.5	0.82	1.5	0.82
R407	1.5	1.0	1.5	1.0	1.5	1.0
R408	2.2K	220	2.2K	220	2.2K	220
R551	12K	8.2K	12K	8.2K	12K	8.2K
R671	0.82	1.5	0.82	1.5	0.82	1.5
W209	—	—	●	●	—	—


12
13
14
15
16
17
AUDIO
J351
R354 390 1/2W
C361 2200
C363 2200
C362 2200
L307 3.3μH
C364 .022
R352 3.3
C359 35V 1000μ
R355 390 1/2W
L306 3.3μH
C358
PCB-MAIN
DA
XG
SP391
P-ON
(25M5RT/RTN only)
CVBS
GND
SCL
SDA
STTV
R-OUT
G-OUT
B-OUT
BLK
+5V
HA
Q714 JC501 OSD-BLK-B
Q715 JC501 OSD-BLK-G
Q713 JC501 OSD-BLK-R
Q710 JC501-R OSD
Q709 JC501-R OSD
R211 220
PCB-UNITEXT CT-25M5ET
PCB-TEXT CT-25M5RT
GA
⑬
⑭
⑮
PCB-CRT
R
G
B
5V
GND
FDBK
IC660
TEA5101B
CRT-DRIVER
R-IN
12V
G-IN
B-IN
200V
FDBK
B-OUT
G-OUT
R-OUT
⑱
⑰
⑯
3.7V
11.8V
3.7V
3.6V
198V
3.2V
141V
0V
140V
141V
3.2V
138V
140V
3.3V
138V
C689 120
C650 25V .01
C656 16V 47μ
C670 56
C658 220 SH
C663 500V 1000
C662 500V 1000
C664 500V 1000
D656 1N4148
D655 1N4148
D657 1N4148
R688 220
R690 220
R689 220
R683 1K
R673 39K 2W
R672 39K 2W
R684 1K
R674 39K 2W
R682 1K
C408 200V
DY
V
H
D708 1N4148
L661
J601 SOCKET-CRT
R670 2.7K 1/2W
R668 2.7K 1/2W
R669 2.7K 1/2W
CRT
G2
F2
FOCUS
D647 BYV95E
R671 1W
SA
C654 250V
Q6E7 JC501-R SPOT-KILLER
Q6E8
R681 33K
C667
R682 12K
R683 1.5K
11.1V
11.8V
⑬0.86Vp-p(H)
⑭0.92Vp-p(H)
⑮1.3Vp-p(H)
⑯86Vp-p(H)
⑰87Vp-p(H)
⑱97Vp-p(H)

R403	6.8K	18K	6.8K	18K	6.8K	18K
R404	33K	39K	33K	39K	33K	39K
R406	1.5	0.82	1.5	0.82	1.5	0.82
R407	1.5	1.0	1.5	1.0	1.5	1.0
R408	2.2K	220	2.2K	220	2.2K	220
R551	12K	8.2K	12K	8.2K	12K	8.2K
R671	0.82	1.5	0.82	1.5	0.82	1.5
W209	—	—	●	●	—	—


PCB-MAIN
DA
XG
SP391
P-ON
(25M5RT/RTN only)
CVBS
GND
SCL
SDA
STTV
R-OUT
G-OUT
B-OUT
BLK
+5V
HA
Q714
JC501
OSD-BLK
-B
Q715
JC501
OSD-BLK
-G
Q710
JC501-R
-OSD
Q709
JC501-R
-OSD
Q713
JC501
OSD-BLK-R
R211
220
D708
1N4148
PCB-UNITEXT
CT-25M5ET
PCB-TEXT
CT-25M5RT
GA
⑬
⑭
⑮
PCB-CRT
R
G
B
5V
GND
FDBK
IC660
TEA5101B
CRT-DRIVER
⑱
⑰
⑯
R-IN
12V
G-IN
B-IN
200V
FDBK
B-OUT
G-OUT
R-OUT
3.7V
11.8V
3.6V
198V
3.2V
141V
0V
140V
138V
3.3V
C669
120
C650
25V
.01
C658
16V
47μ
C670
56
C668
220
C663
500V
1000
C662
500V
1000
C664
500V
1000
D656
1N4148
D655
1N4148
D657
1N4148
R666
220
R660
220
R668
220
R663
1K
R673
39K
2W
R672
39K
2W
R664
1K
R674
39K
2W
R662
1K
C409
200V
.1
DY
V
H
L661
ENT
FOCUS ADJ
SCREEN ADJ
TP
LB
R218
47K
R217
150K
C321
200V
C320
250V
47μ
J501
SOCKET-CRT
CRT
R670
2.7K
1/2W
R669
2.7K
1/2W
R668
2.7K
1/2W
G2
F2
FOCUS
D6A7
BYV95E
SA
Q6E7
JC501-R
SPOT-KILLER
R6E2
12K
R6E3
1.8K
R6E1
33K
C6E7
25V
10μ
Q6E8
2SA950-Y
SPOT-KILLER
-SW
7V
0V
11.1V
11.8V
C654
250V
.1
R671
1W
R661
100
1/2W
C655
2KV
1000
200V
GND
HEATER(-)
12V
HEATER(+)
B
SCREEN
⑫146Vp-p(H)

*See page ① for IC BLOCK DIAGRAMS.

⑬0.86Vp-p(H)

⑭0.92Vp-p(H)

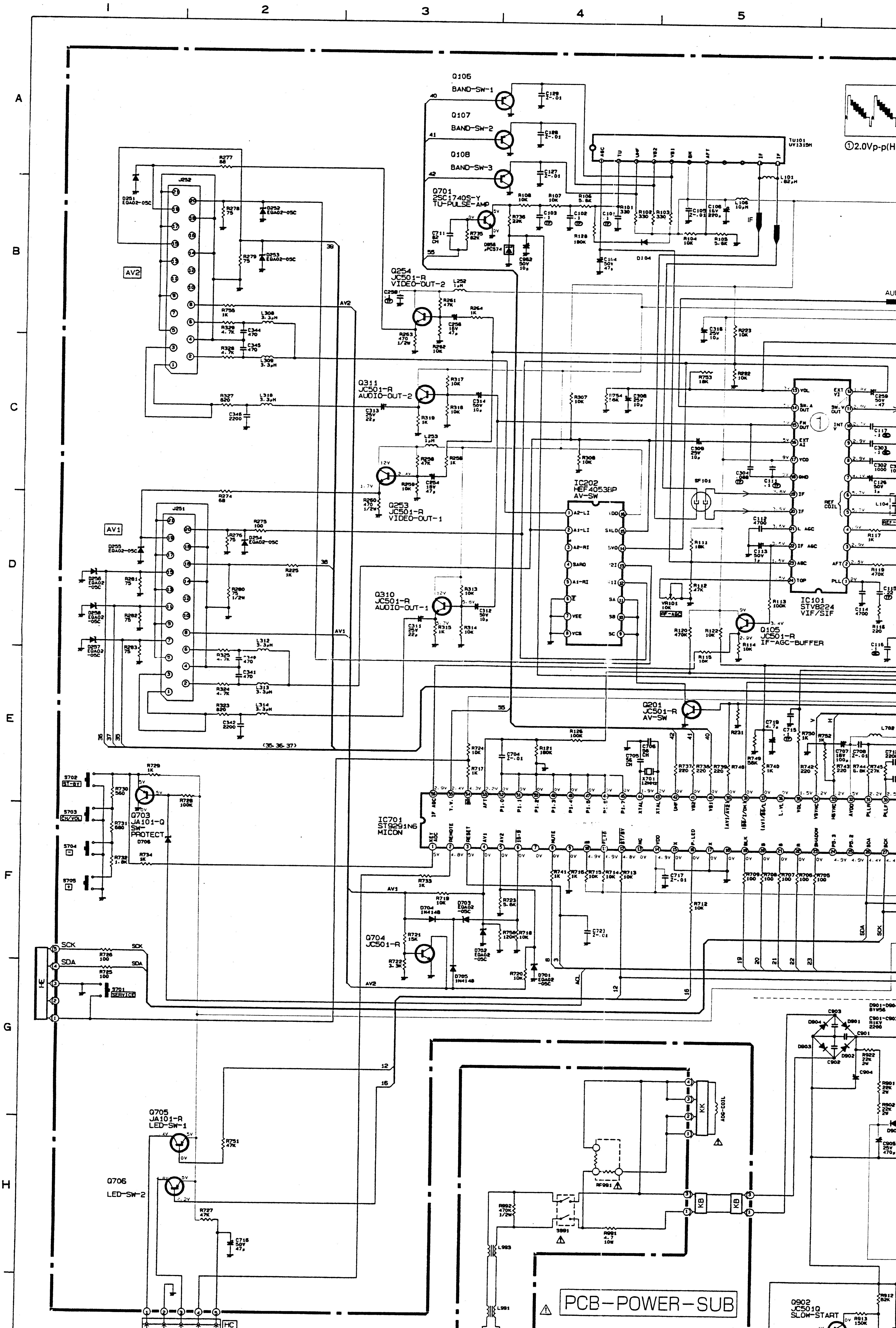
⑮1.3Vp-p(H)

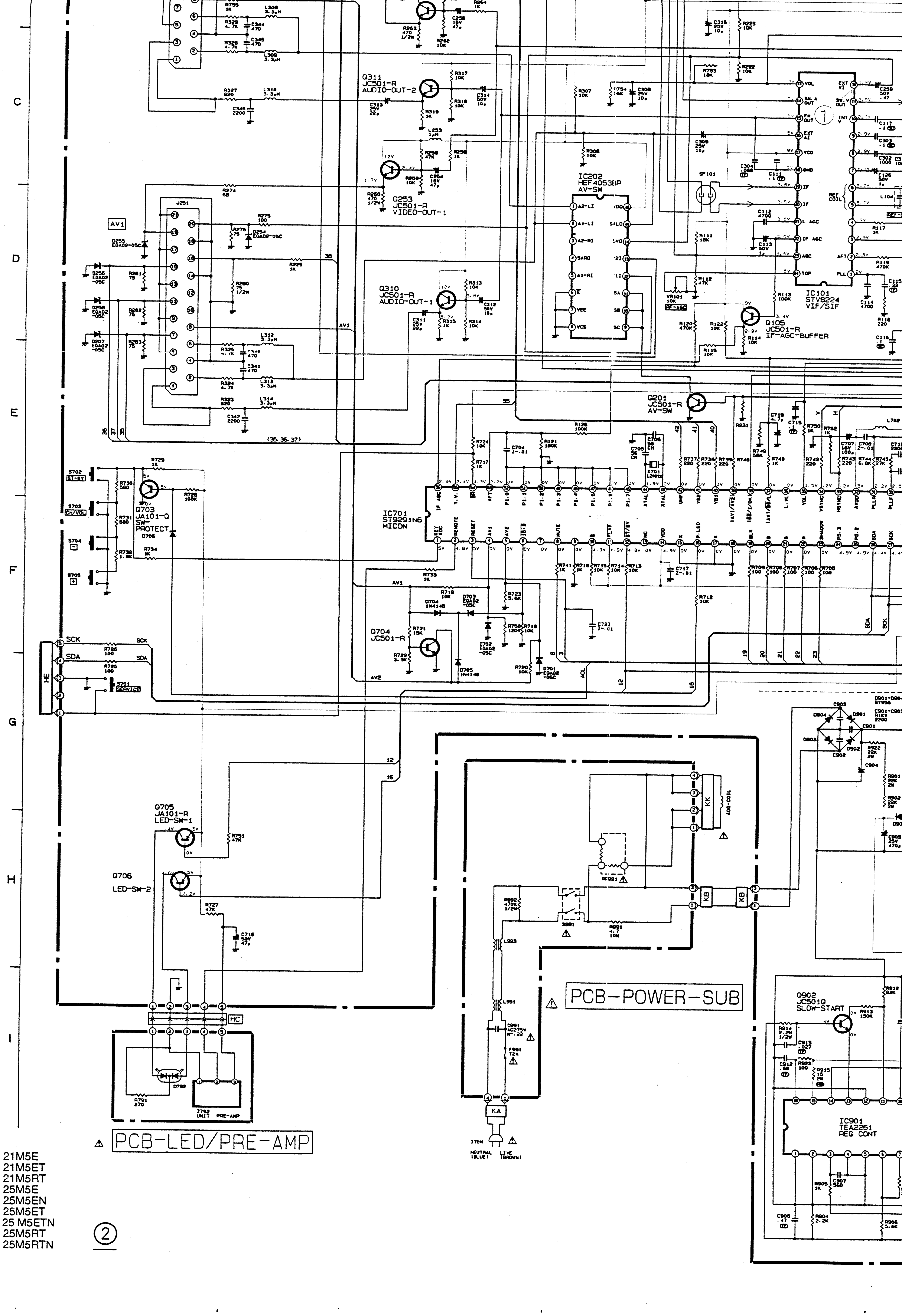
⑯86Vp-p(H)

⑰87Vp-p(H)

⑱97Vp-p(H)

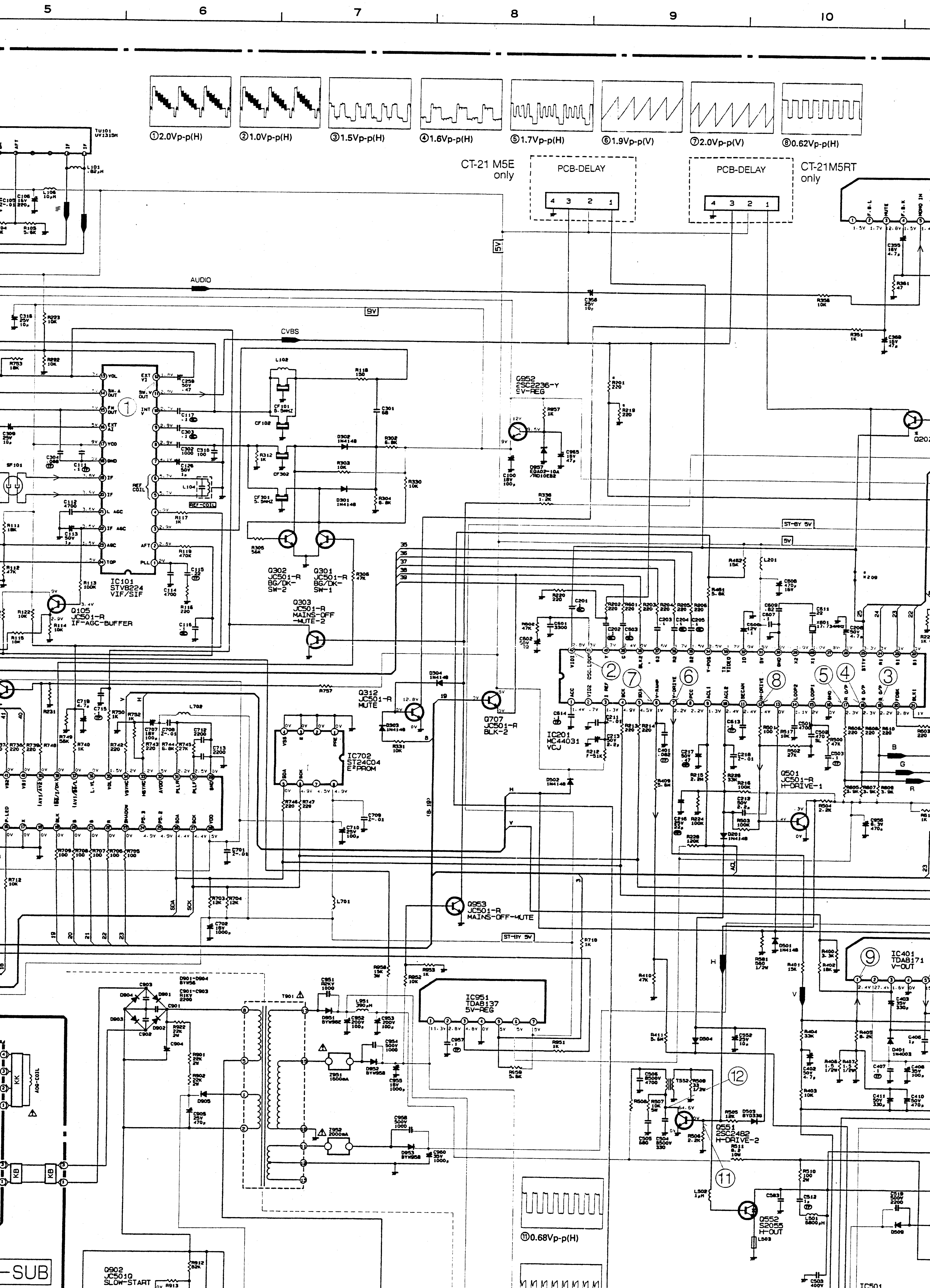
CT - 21M5E
CT - 21M5ET
CT - 21M5RT
CT - 25M5E
CT - 25M5EN
CT - 25M5ET
CT - 25 M5ETN
CT - 25M5RT
CT - 25M5RTN

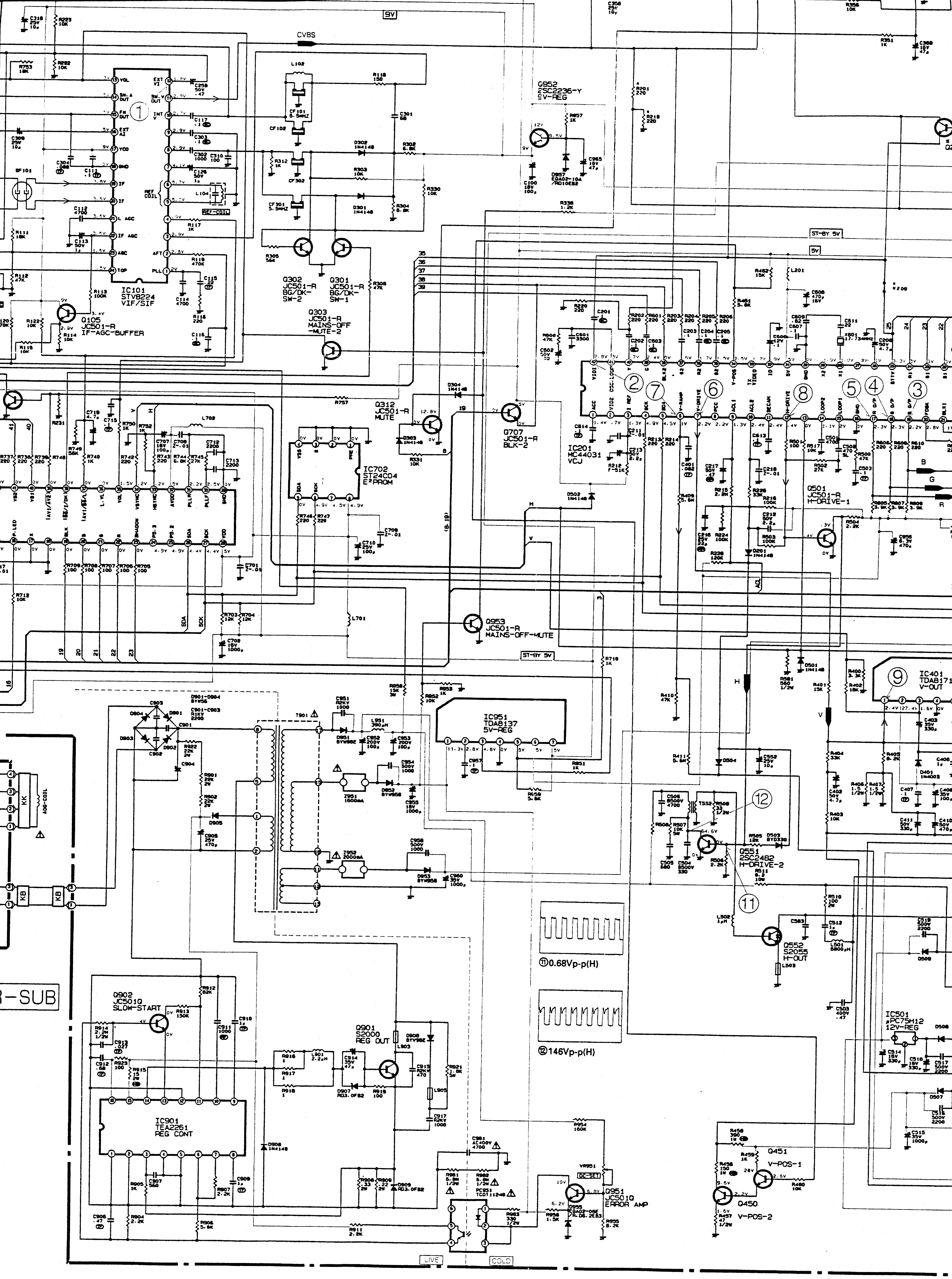

1
2
3
4
5
A
B
C
D
E
F
G
H
Q106
BAND-SW-1
C129 Z-.01
Q107
BAND-SW-2
C128 Z-.01
Q108
BAND-SW-3
C127 Z-.01
Q701
2SC1740S-Y
TU-PULSE-AMP
TU101
UV1315H
AGC
TU
UHF
VB2
VB1
BM
AFT
IF
L101 .82μH
①2.0Vp-p(H
IF
AV2
J252
R277 68
D251 EQA02-05C
R278 75
D252 EQA02-05C
R279 75
D253 EQA02-05C
R756 1K
R329 4.7K
C344 470
L308 3.3μH
R328 4.7K
C345 470
L309 3.3μH
R327 820
L310 3.3μH
C346 2200
Q254
JC501-R
VIDEO-OUT-2
L252 1μH
C258
R261 47K
R264 1K
C256 16V 47μ
R263 470 1/2W
R262 10K
Q311
JC501-R
AUDIO-OUT-2
R317 10K
C314 50V 10μ
C313 25V 22μ
R318 10K
R319 1K
L253 1μH
R258 47K
R256 1K
Q253
JC501-R
VIDEO-OUT-1
R259 10K
C254 16V 47μ
R260 470 1/2W
AV1
J251
R274 68
R275 100
D255 EQA02-05C
R276 75
D254 EQA02-05C
R225 1K
D256 EQA02 -05C
R281 75
R280 75 1/2W
D258 EQA02 -05C
R282 75
D257 EQA02 -05C
R283 75
R325 4.7K
C340 470
L312 3.3μH
C341 470
R324 4.7K
L313 3.3μH
R323 820
L314 3.3μH
C342 2200
(35.36.37)
Q310
JC501-R
AUDIO-OUT-1
R313 10K
C312 50V 10μ
C311 25V 22μ
R315 1K
R314 10K
IC202
HEF4053BP
AV-SW
A2-LI
A1-LI
A2-RI
SARO
A1-RI
VEE
VCC
VDD
SALO
SVO
SA
SB
SC
R108 10K
R107 10K
R106 5.6K
R736 22K
R735 82K
C711
D958 μPC574
C962 50V 10μ
C103
C102
R126 180K
C101
R101 330
R102 330
R103 330
C105
C106 16V 220μ
L106 10μH
R104 10K
R105 5.6K
D104
C104 50V 47μ
C316 25V 10μ
R223 10K
R753 18K
R222 10K
R307 10K
L754 1.6K
C308 25V 10μ
C309 25V 10μ
R308 10K
SF101
C304 .068
C111 .1
C112 4700
C113 50V 1μ
R111 18K
R112 47K
VR101 10K
RF-AGC
R113 100K
R120 470K
R122 10K
Q105
JC501-R
IF-AGC-BUFFER
R114 10K
R115 10K
IC101
STV8224
VIF/SIF
VOL
SW.A OUT
FM OUT
EXT AI
YCO
GND
IF
L AGC
IF AGC
AGC
TOP
EXT VI
SW.V OUT
INT V
REF COIL
AFT
PLL
C259 50V .47
C117 .1
C303 .1
C302 1000
C126 50V 1μ
L104
R117 1K
R119 470K
C114 4700
C115 .22
R116 220
C116
Q201
JC501-R
AV-SW
R231
C719 4.7μ
C715
R750 1K
R752 1K
L702
R126 100K
R724 10K
R717 1K
C704 Z-.01
R121 180K
C705
C706
X701 12MHz
R737 220
R738 220
R739 220
R748
R749 56K
R740 1K
R742 220
C707 16V 100μ
C708 Z-.01
R743 220
R744 6.8K
R745 27K
IC701
ST9291N6
MICON
IF AGC
T.V.
AFT
XTAL
UHF
VB2
VB1
VOL
VSYNC
HSYNC
AVDD
PLLF
KEY ADC
REMOTE
RESET
AV1
AV2
MUTE
VDD
P.LED
BLK
SDA
SCK
S702 ST-BY
S703 CH/VOL
S704 −
S705 +
R730 560
R731 680
R732 1.8K
R729 1K
R728 100K
Q703
JA101-Q
SW-PROTECT
D706
R734 1K
R733 1K
R741 1K
R716 1K
R715 10K
R714 10K
R713 10K
C717 Z-.01
R709 100
R708 100
R707 100
R706 100
R705 100
R712 10K
R719 10K
D704 1N4148
D703 EQA02 -05C
R723 5.6K
R721 15K
Q704
JC501-R
R722 3.3K
D702 EQA02 -05C
R758 120K
R718 10K
D705 1N4148
R720 10K
D701 EQA02 -05C
C723 Z-.01
HE
SCK
SDA
R726 100
R725 100
S701 SERVICE
D901-D904 BYW56
C901-C903 R1KV 2200
C903
D904
D901
D903
C901
C902
D902
R922 22K 2W
C904
R901 22K 2W
R902 22K 2W
C905 25V 470μ
KK
ADG-COIL
RF901
R992 470K 1/2W
S901
R991 4.7 10W
L993
L991
KB
PCB-POWER-SUB
Q902
JC501Q
SLOW-START
R913 150K
R912 82K
Q705
JA101-R
LED-SW-1
R751 47K
Q706
LED-SW-2
R727 47K
C716 50V 47μ
HC
AUI


C
D
E
F
G
H
I
Q311 JC501-R AUDIO-OUT-2
Q253 JC501-R VIDEO-OUT-1
Q310 JC501-R AUDIO-OUT-1
IC202 HEF4053BP AV-SW
IC101 STV8224 VIF/SIF
Q105 JC501-R IF-AGC-BUFFER
SF101
VR101 10K RF-AGC
REF COIL
J251
AV1
D255 EQA02-05C
D254 EQA02-05C
D256 EQA02-05C
D258 EQA02-05C
D257 EQA02-05C
Q201 JC501-R AV-SW
IC701 ST9291N6 MICON
X701 12MHz
S702 ST-BY
S703 CH/VOL
S704 −
S705 +
Q703 JA101-Q SW-PROTECT
D706
Q704 JC501-R
D704 1N4148
D703 EQA02-05C
D702 EQA02-05C
D705 1N4148
D701 EQA02-05C
AV1
AV2
HE
SCK
SDA
S701 SERVICE
Q705 JA101-R LED-SW-1
Q706 LED-SW-2
HC
D792
Z792 UNIT PRE-AMP
PCB-LED/PRE-AMP
PCB-POWER-SUB
KK
ADG-COIL
RF991
S891
KB
KB
L993
L991
C991 AC275V
F991 T2A
KA
ITEM
NEUTRAL (BLUE)
LIVE (BROWN)
Q902 JC501Q SLOW-START
IC901 TEA2261 REG CONT
D901-D904
C901-C903
(35.36.37)
①

CT - 21M5E
CT - 21M5ET
CT - 21M5RT
CT - 25M5E
CT - 25M5EN
CT - 25M5ET
CT - 25 M5ETN
CT - 25M5RT
CT - 25M5RTN

②


5
6
7
8
9
10
①2.0Vp-p(H)
②1.0Vp-p(H)
③1.5Vp-p(H)
④1.6Vp-p(H)
⑤1.7Vp-p(H)
⑥1.9Vp-p(V)
⑦2.0Vp-p(V)
⑧0.62Vp-p(H)
CT-21 M5E only
PCB-DELAY
CT-21M5RT only
PCB-DELAY
TU101 UV1315H
AUDIO
CVBS
5V
9V
ST-BY 5V
IC101 STV8224 VIF/SIF
Q105 JC501-R IF-AGC-BUFFER
Q302 JC501-R BG/DK-SW-2
Q301 JC501-R BG/DK-SW-1
Q303 JC501-R MAINS-OFF -MUTE-2
Q952 2SC2236-Y 5V-REG
Q312 JC501-R MUTE
Q707 JC501-R BLK-2
IC702 ST24C04 E²PROM
IC201 MC44031 VCJ
Q501 JC501-R H-DRIVE-1
Q953 JC501-R MAINS-OFF-MUTE
IC951 TDA8137 5V-REG
IC401 TDA8171 V-OUT
Q551 2SC2482 H-DRIVE-2
Q552 S2055 H-OUT
Q202
T901
T552
Z951 1600mA
Z952 2000mA
Q902 JC501Q SLOW-START
IC501
KK
KB
AGC-COIL
REF-COIL
SDA
SCK
B
G
R
H
V
AGC
⑨
⑪
⑫
⑪0.68Vp-p(H)
-SUB

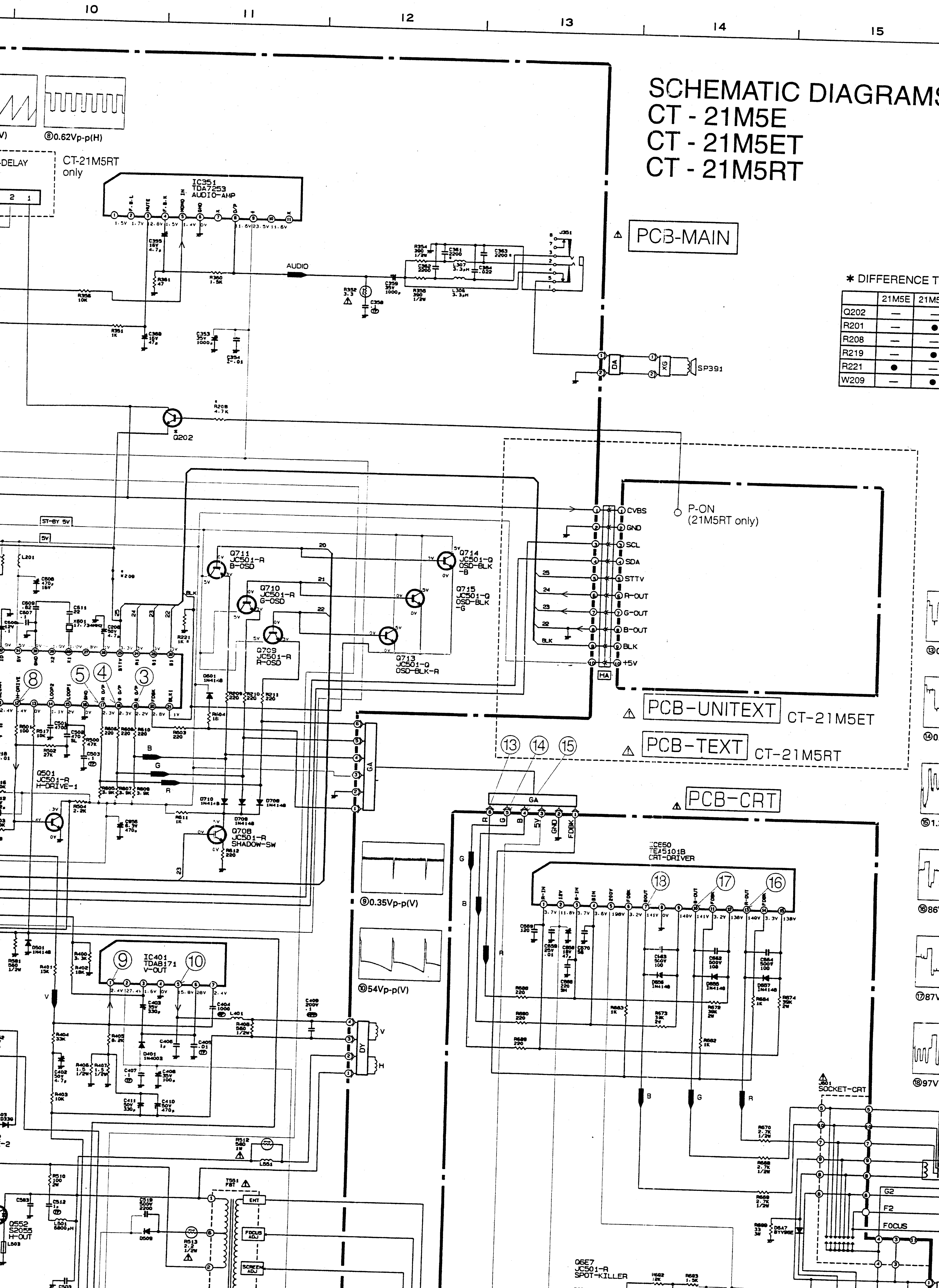


IC101
STV8224
VIF/SIF
Q105
JC501-R
IF-AGC-BUFFER
SF101
REF COIL
L104
CVBS
9V
L102
CF101
5.5MHZ
CF102
CF301
5.5MHZ
CF302
Q302
JC501-R
BG/DK-
SW-2
Q301
JC501-R
BG/DK-
SW-1
Q303
JC501-R
MAINS-OFF
-MUTE-2
Q952
2SC2236-Y
5V-REG
D957
EQA02-10A
/RD10EB2
ST-BY 5V
5V
IC201
MC44031
VCJ
Q312
JC501-R
MUTE
Q707
JC501-R
BLK-2
IC702
ST24C04
E²PROM
Q501
JC501-R
H-DRIVE-1
L702
L701
SDA
SCK
Q953
JC501-R
MAINS-OFF-MUTE
ST-BY 5V
IC951
TDA8137
5V-REG
IC401
TDA8171
V-OUT
T901
D901-D904
BYW56
Z951
1600mA
Z952
2000mA
L951
390μH
D951
BYW98E
D952
BYW958
D953
BYW958
T552
Q551
2SC2482
H-DRIVE-2
Q552
S2055
H-OUT
L501
6800μH
L502
1μH
L503
IC501
μPC75H12
12V-REG
⑪0.68Vp-p(H)
⑫146Vp-p(H)
Q902
JC501Q
SLOW-START
Q901
S2000
REG OUT
L903
L905
IC901
TEA2261
REG CONT
D907
RD3.0FB2
D908
1N4148
D909
RD3.0FB2
PC951
TCDT1124G
VR951
DC-SET
Q951
JC501Q
ERROR AMP
D955
EQA02-06E
/RD6.2EB3
Q451
V-POS-1
Q450
V-POS-2
LIVE
COLD
KK
AGC-COIL
KB
R-SUB
H
V
B
G
R
ACL

SCHEMATIC DIAGRAMS
CT - 21M5E
CT - 21M5ET
CT - 21M5RT

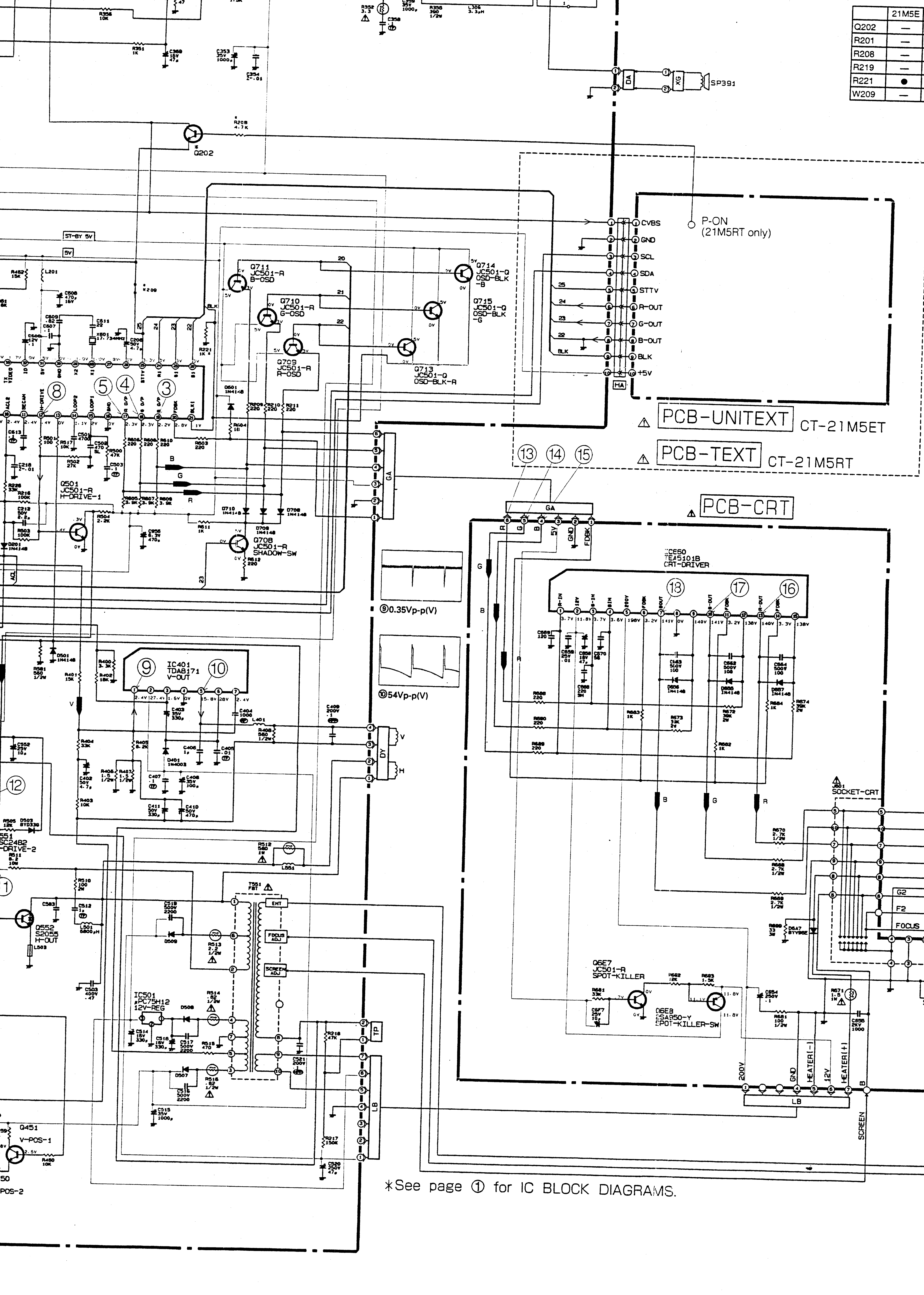
* DIFFERENCE T

	21M5E	21M5
Q202	—	—
R201	—	●
R208	—	—
R219	—	●
R221	●	—
W209	—	●



10
11
12
13
14
15
⑧0.62Vp-p(H)
DELAY
CT-21M5RT only
IC351 TDA7253 AUDIO-AMP
AUDIO
J351
SP391
DA
XG
PCB-MAIN
Q202
R208 4.7K
CVBS
GND
SCL
SDA
STTV
R-OUT
G-OUT
B-OUT
BLK
+5V
HA
P-ON (21M5RT only)
PCB-UNITEXT CT-21M5ET
PCB-TEXT CT-21M5RT
PCB-CRT
Q711 JC501-R B-OSD
Q710 JC501-R G-OSD
Q709 JC501-R R-OSD
Q714 JC501-Q OSD-BLK-B
Q715 JC501-Q OSD-BLK-G
Q713 JC501-Q OSD-BLK-R
Q708 JC501-R SHADOW-SW
Q501 JC501-R H-DRIVE-1
X601 17.734MHz
GA
⑨0.35Vp-p(V)
⑩54Vp-p(V)
IC401 TDA8171 V-OUT
DY
IC660 TEA5101B CRT-DRIVER
⑬ ⑭ ⑮ ⑯ ⑰ ⑱
SOCKET-CRT
G2
F2
FOCUS
T551 FBT
EHT
FOCUS ADJ
SCREEN ADJ
Q552 S2055 H-OUT
Q6E7 JC501-R SPOT-KILLER
⑬0
⑭0.
⑮1.
⑯86V
⑰87V
⑱97V

	21M5E
Q202	—
R201	—
R208	—
R219	—
R221	●
W209	—

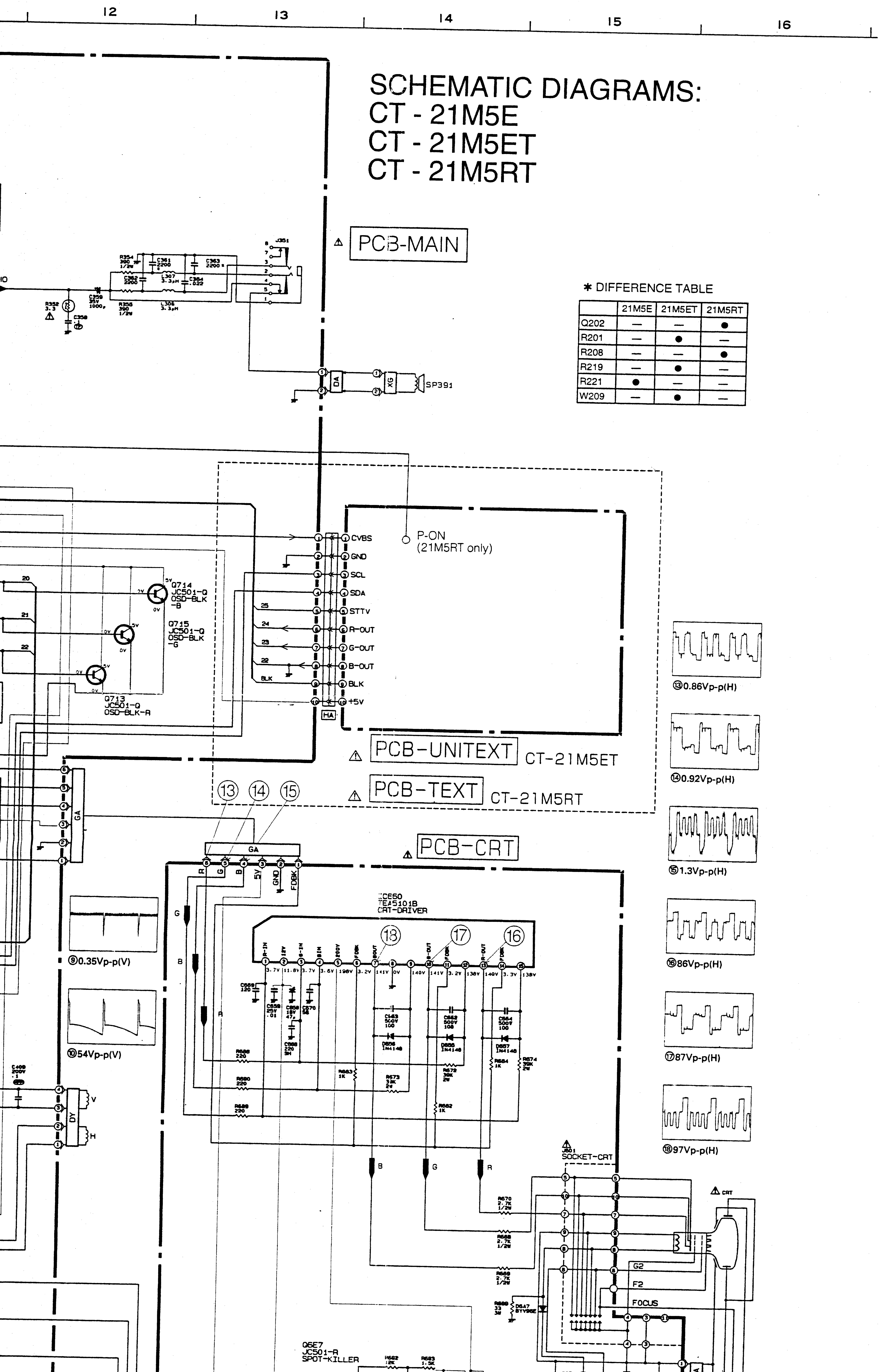

SP391
Q202
P-ON
(21M5RT only)
CVBS
GND
SCL
SDA
STTV
R-OUT
G-OUT
B-OUT
BLK
+5V
HA
Q711 JC501-R B-OSD
Q710 JC501-R G-OSD
Q709 JC501-R R-OSD
Q714 JC501-Q OSD-BLK -B
Q715 JC501-Q OSD-BLK -G
Q713 JC501-Q OSD-BLK-R
Q708 JC501-R SHADOW-SW
Q501 JC501-R H-DRIVE-1
PCB-UNITEXT CT-21M5ET
PCB-TEXT CT-21M5RT
PCB-CRT
GA
IC660 TEA5101B CRT-DRIVER
IC401 TDA8171 V-OUT
⑨0.35Vp-p(V)
⑩54Vp-p(V)
DY
T551 FBT
EHT
FOCUS ADJ
SCREEN ADJ
IC501 μPC75H12 12V-REG
TP
LB
Q552 S2055 H-OUT
Q451 V-POS-1
Q6E7 JC501-R SPOT-KILLER
Q6E8 2SA950-Y SPOT-KILLER-SW
J601 SOCKET-CRT
G2
F2
FOCUS
200V
GND
HEATER(-)
12V
HEATER(+)
SCREEN
ST-BY 5V
5V

*See page ① for IC BLOCK DIAGRAMS.

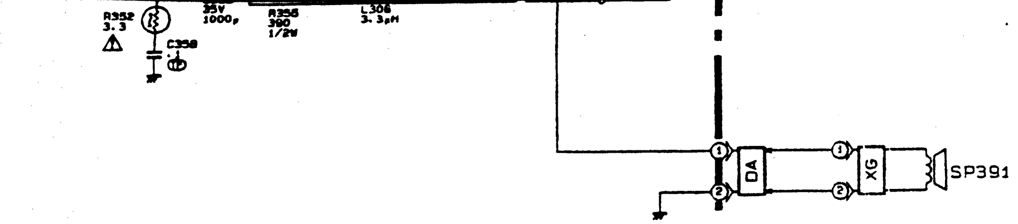
SCHEMATIC DIAGRAMS:
CT - 21M5E
CT - 21M5ET
CT - 21M5RT

✱ DIFFERENCE TABLE

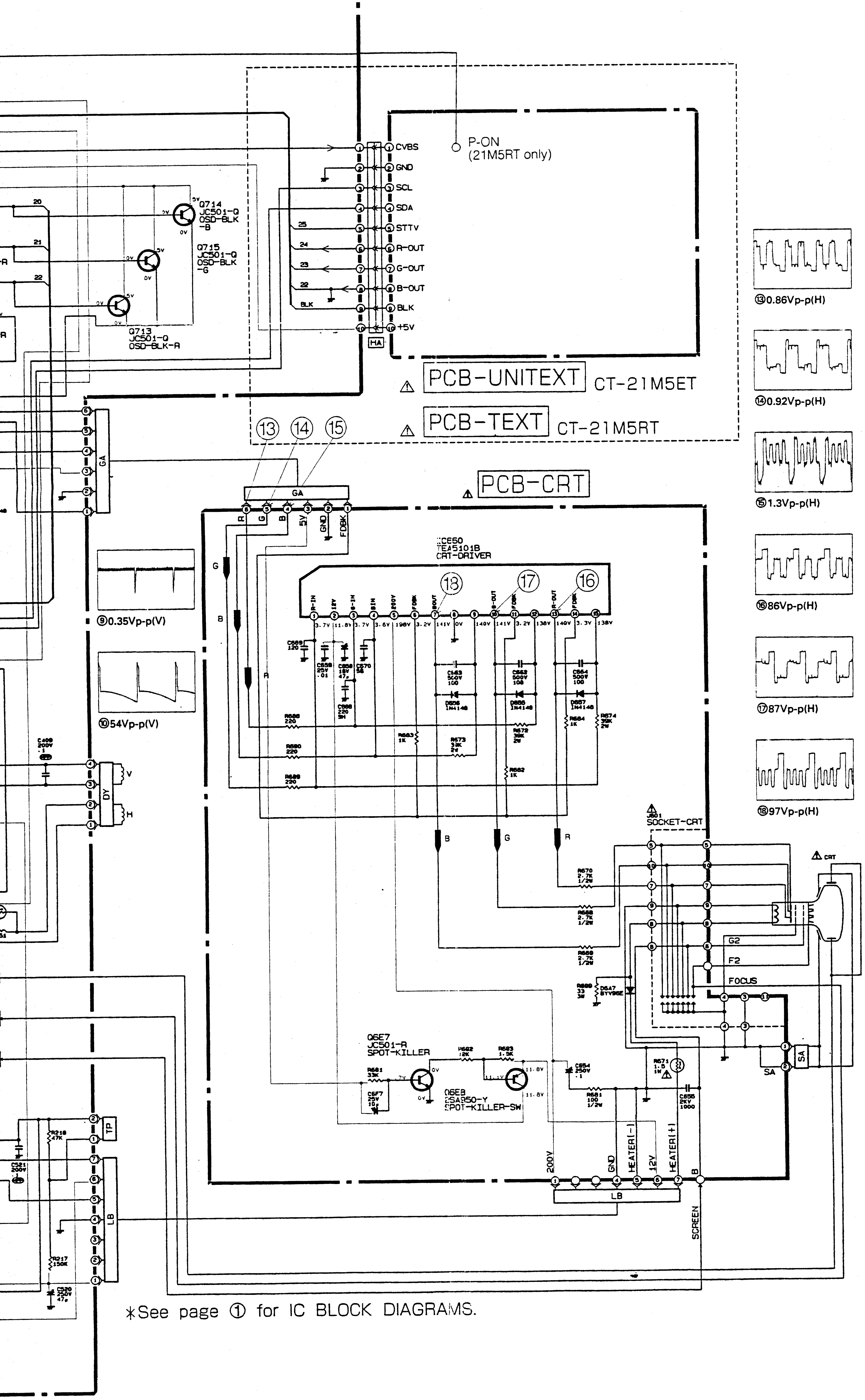
	21M5E	21M5ET	21M5RT
Q202	—	—	●
R201	—	●	—
R208	—	—	●
R219	—	●	—
R221	●	—	—
W209	—	●	—


12
13
14
15
16
PCB-MAIN
J351
R354 390 1/2W
C361 2200
C363 2200
C362 2200
L307 3.3µH
C364 .022
R352 3.3
C359 35V 1000µ
R356 390 1/2W
L306 3.3µH
C358
DA
XG
SP391
CVBS
GND
SCL
SDA
STTV
R-OUT
G-OUT
B-OUT
BLK
+5V
HA
P-ON
(21M5RT only)
Q714 JC501-Q OSD-BLK -B
Q715 JC501-Q OSD-BLK -G
Q713 JC501-Q OSD-BLK-R
PCB-UNITEXT CT-21M5ET
PCB-TEXT CT-21M5RT
PCB-CRT
GA
R G B 5V GND FDBK
IC650 TEA5101B CRT-DRIVER
⑬ ⑭ ⑮ ⑯ ⑰ ⑱
⑨0.35Vp-p(V)
⑩54Vp-p(V)
DY
V
H
C409 200V .1
R688 220
R680 220
R689 220
C669 120
C658 25V .01
C656 16V 47µ
C670 56
C668 220 5H
C663 500V 100
C662 500V 100
C664 500V 100
D656 1N4148
D655 1N4148
D657 1N4148
R663 1K
R673 33K 2W
R672 39K 2W
R664 1K
R674 39K 2W
R682 1K
J601 SOCKET-CRT
R670 2.7K 1/2W
R668 2.7K 1/2W
R669 2.7K 1/2W
R690 33 3W
D6A7 BYV95E
G2
F2
FOCUS
CRT
Q6E7 JC501-R SPOT-KILLER
R662 12K
R683 1.5K
⑬0.86Vp-p(H)
⑭0.92Vp-p(H)
⑮1.3Vp-p(H)
⑯86Vp-p(H)
⑰87Vp-p(H)
⑱97Vp-p(H)

Q202	—	—	●
R201	—	●	—
R208	—	—	●
R219	—	●	—
R221	●	—	—
W209	—	●	—



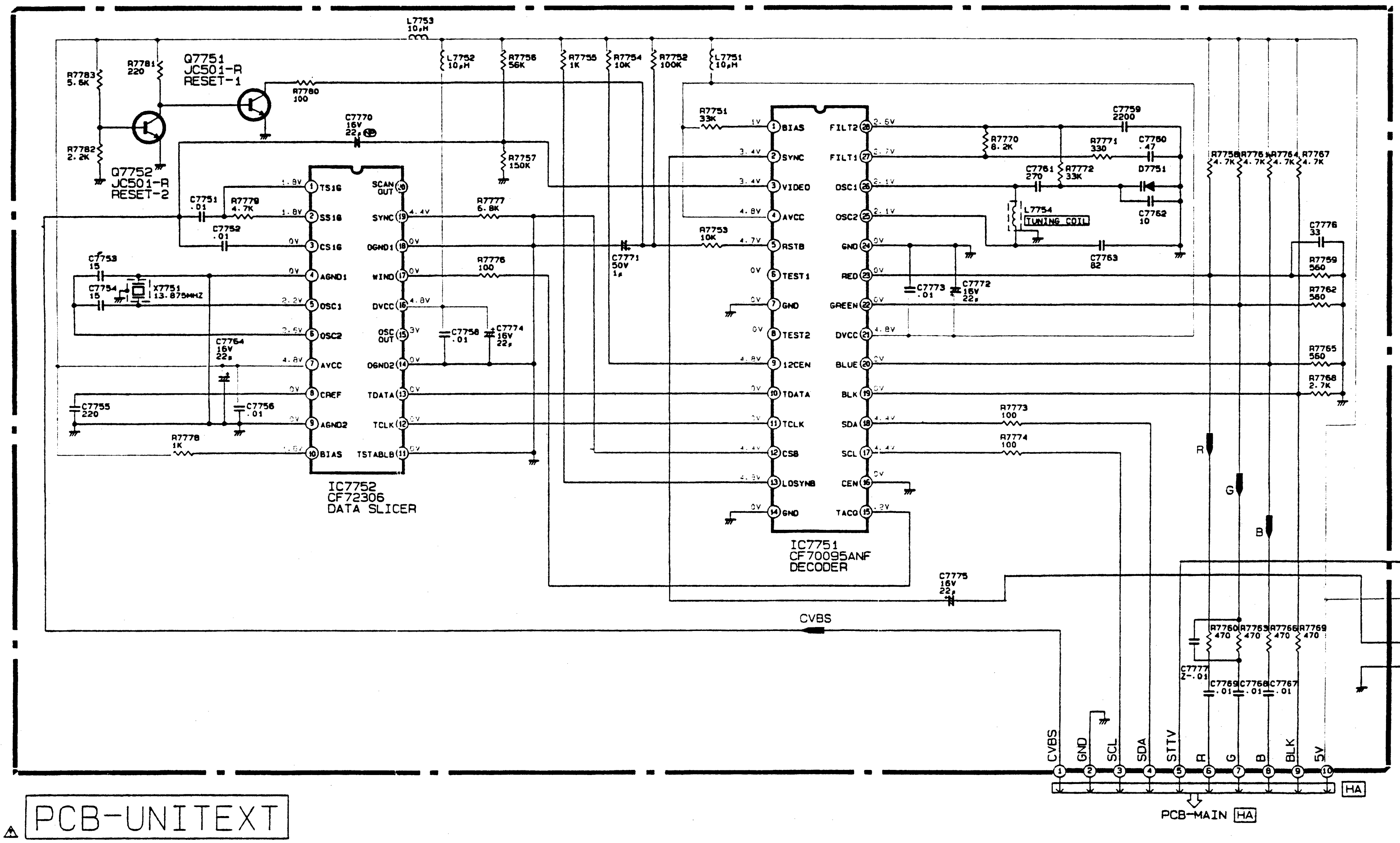
R352
3.3
35V
1000μ
R356
390
1/2W
L306
3.3μH
C358
DA
XG
SP391



CVBS
GND
SCL
SDA
STTV
R-OUT
G-OUT
B-OUT
BLK
+5V
HA
P-ON
(21M5RT only)
Q714
JC501-Q
OSD-BLK
-B
Q715
JC501-Q
OSD-BLK
-G
Q713
JC501-Q
OSD-BLK-R
PCB-UNITEXT
CT-21M5ET
PCB-TEXT
CT-21M5RT
⑬
⑭
⑮
GA
PCB-CRT
R
G
B
5V
GND
FDBK
IC650
TEA5101B
CRT-DRIVER
R-IN
12V
G-IN
B-IN
200V
FDBK
B-OUT
G-OUT
R-OUT
⑱
⑰
⑯
3.7V
11.8V
3.7V
3.6V
198V
3.2V
141V
0V
140V
141V
3.2V
138V
140V
3.3V
138V
C659 120
C658 25V .01
C658 16V 47μ
C670 56
C666 220 5W
C663 500V 100
C662 500V 100
C664 500V 100
D656 1N4148
D666 1N4148
D667 1N4148
R686 220
R680 220
R689 220
R683 1K
R673 33K 2W
R672 39K 2W
R684 1K
R674 39K 2W
R682 1K
⑨0.35Vp-p(V)
⑩54Vp-p(V)
C409 200V .1
DY
V
H
J601
SOCKET-CRT
CRT
R670 2.7K 1/2W
R668 2.7K 1/2W
R669 2.7K 1/2W
R699 33 3W
D6A7 BYV95E
G2
F2
FOCUS
SA
Q6E7
JC501-R
SPOT-KILLER
R681 33K
C6F7 25V 10μ
R662 12K
R663 1.5K
Q6E8
2SA950-Y
SPOT-KILLER-SW
C654 250V .1
R681 100 1/2W
R671 1.8 1W
C656 2KV 1000
200V
GND
HEATER(-)
12V
HEATER(+)
B
LB
SCREEN
TP
R218 47K
C521 200V
R217 150K
C520 250V 47μ
⑬0.86Vp-p(H)
⑭0.92Vp-p(H)
⑮1.3Vp-p(H)
⑯86Vp-p(H)
⑰87Vp-p(H)
⑱97Vp-p(H)

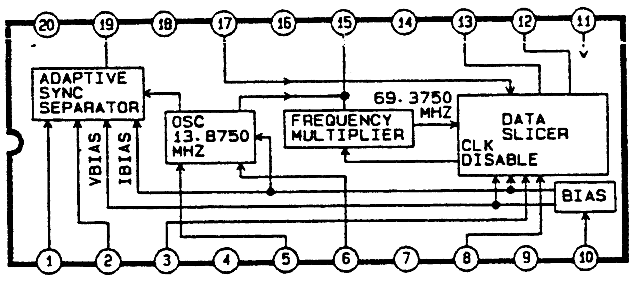
*See page ① for IC BLOCK DIAGRAMS.

1 2 3 4 5 6


Q7751
JC501-R
RESET-1
Q7752
JC501-R
RESET-2
R7783 5.6K
R7781 220
R7782 2.2K
R7780 100
L7753 10μH
L7752 10μH
R7758 56K
R7755 1K
R7754 10K
R7752 100K
L7751 10μH
C7770 16V 22μ
R7757 150K
R7777 6.8K
R7776 100
R7779 4.7K
C7751 .01
C7752 .01
C7753 15
C7754 15
X7751 13.875MHZ
C7764 16V 22μ
C7755 220
C7756 .01
R7778 1K
C7758 .01
C7774 16V 22μ
IC7752
CF72306
DATA SLICER
R7751 33K
R7753 10K
C7771 50V 1μ
IC7751
CF70095ANF
DECODER
C7759 2200
R7770 8.2K
R7771 330
C7760 .47
C7761 270
R7772 33K
D7751
L7754
TUNING COIL
C7762 10
C7763 82
C7773 .01
C7772 16V 22μ
R7773 100
R7774 100
R7756 4.7K
R7761 4.7K
R7764 4.7K
R7767 4.7K
C7776 33
R7759 560
R7762 560
R7765 560
R7768 2.7K
C7775 16V 22μ
R7760 470
R7763 470
R7766 470
R7769 470
C7777 Z-.01
C7769 .01
C7768 .01
C7767 .01
CVBS
R
G
B
PCB-DELAY
CVBS
GND
SCL
SDA
STTV
R
G
B
BLK
5V
HA
PCB-MAIN HA

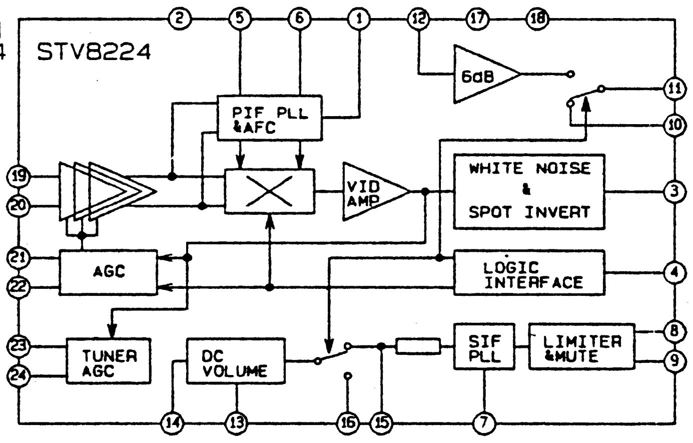
⚠ PCB-UNITEXT
CT-21M5ET
CT25M5ET
CT-25M5ETN

IC7752
CF72306

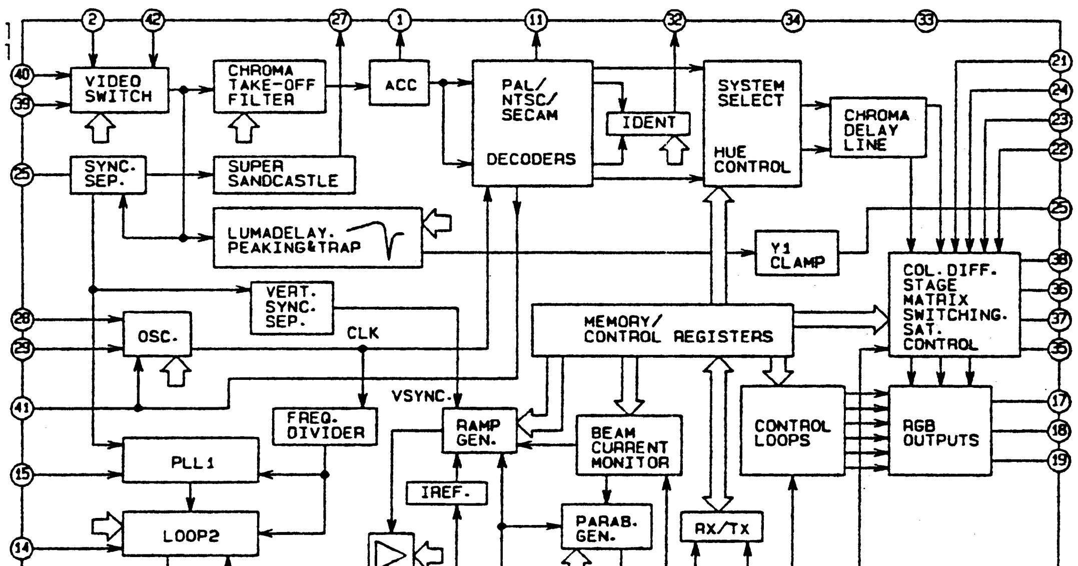

ADAPTIVE SYNC SEPARATOR
VBIAS
IBIAS
OSC 13.8750 MHZ
FREQUENCY MULTIPLIER
69.3750 MHZ
DATA SLICER
CLK DISABLE
BIAS

〈 IC BLOCK DIAGRAMS OF PCB-MAIN and CRT

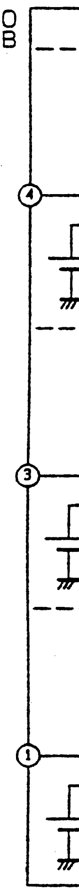
IC101
STV8224

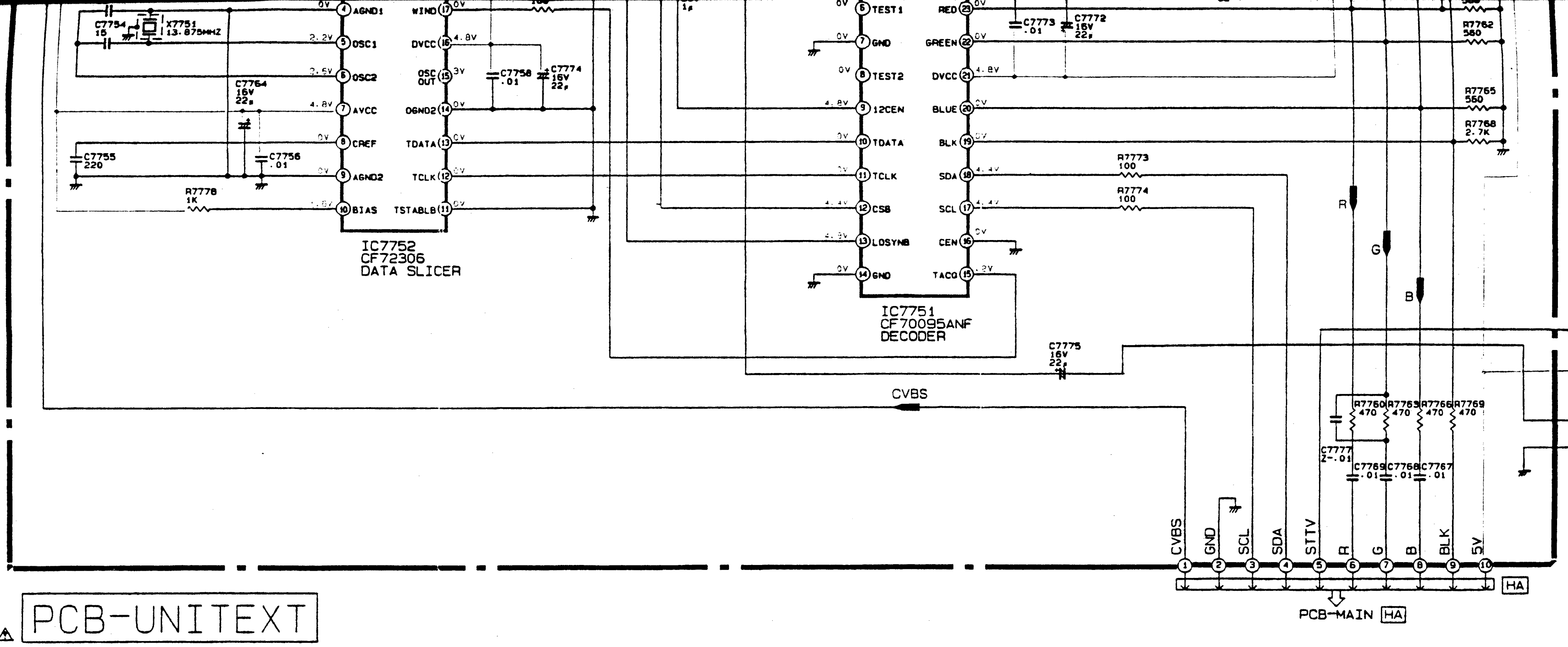

STV8224
PIF PLL &AFC
6dB
VID AMP
WHITE NOISE & SPOT INVERT
AGC
LOGIC INTERFACE
TUNER AGC
DC VOLUME
SIF PLL
LIMITER &MUTE

IC201
MC44031


VIDEO SWITCH
CHROMA TAKE-OFF FILTER
ACC
PAL/ NTSC/ SECAM DECODERS
IDENT
SYSTEM SELECT
HUE CONTROL
CHROMA DELAY LINE
SYNC. SEP.
SUPER SANDCASTLE
LUMADELAY. PEAKING&TRAP
Y1 CLAMP
VERT. SYNC. SEP.
OSC.
CLK
MEMORY/ CONTROL REGISTERS
COL. DIFF. STAGE MATRIX SWITCHING. SAT. CONTROL
VSYNC.
FREQ. DIVIDER
RAMP GEN.
BEAM CURRENT MONITOR
CONTROL LOOPS
RGB OUTPUTS
PLL1
IREF.
PARAB. GEN.
RX/TX
LOOP2

IC660
TEA5101B

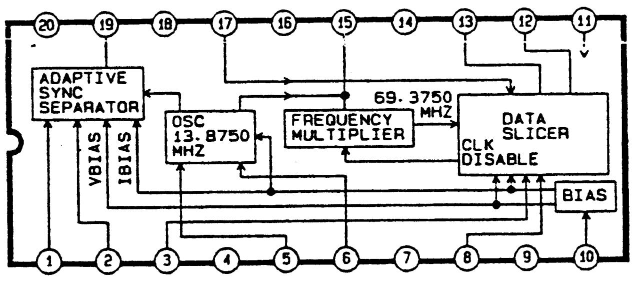



IC7752
CF72306
DATA SLICER
IC7751
CF70095ANF
DECODER
X7751 13.875MHZ
AGND1
OSC1
OSC2
AVCC
CREF
AGND2
BIAS
WIND
DVCC
OSC OUT
OGND2
TDATA
TCLK
TSTABLB
TEST1
GND
TEST2
12CEN
TDATA
TCLK
CSB
LOSYNB
GND
RED
GREEN
DVCC
BLUE
BLK
SDA
SCL
CEN
TACO
C7775 16V 22µ
CVBS
R
G
B
R7773 100
R7774 100
R7760 470
R7763 470
R7766 470
R7769 470
PCB-DELAY
CVBS
GND
SCL
SDA
STTV
R
G
B
BLK
5V
HA
PCB-MAIN HA

⚠ PCB-UNITEXT

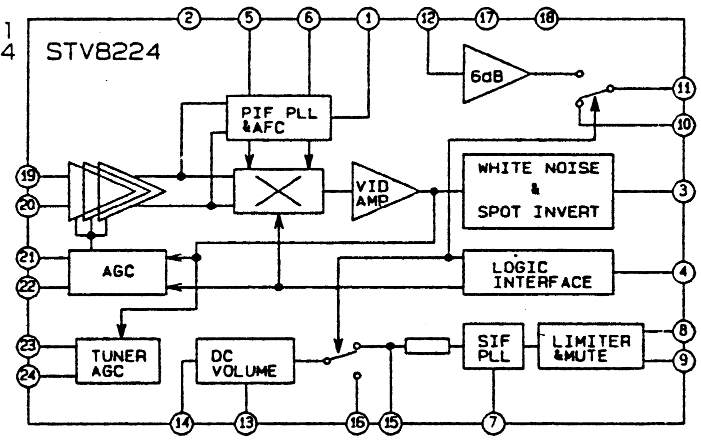
CT-21M5ET
CT25M5ET
CT-25M5ETN

IC7752
CF72306

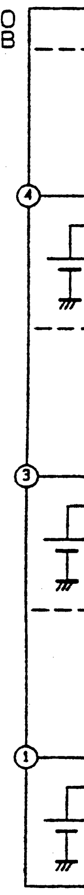

ADAPTIVE SYNC SEPARATOR
OSC 13.8750 MHZ
FREQUENCY MULTIPLIER
69.3750 MHZ
DATA SLICER
CLK DISABLE
BIAS
VBIAS
IBIAS

〈 IC BLOCK DIAGRAMS OF PCB-MAIN and CRT 〉

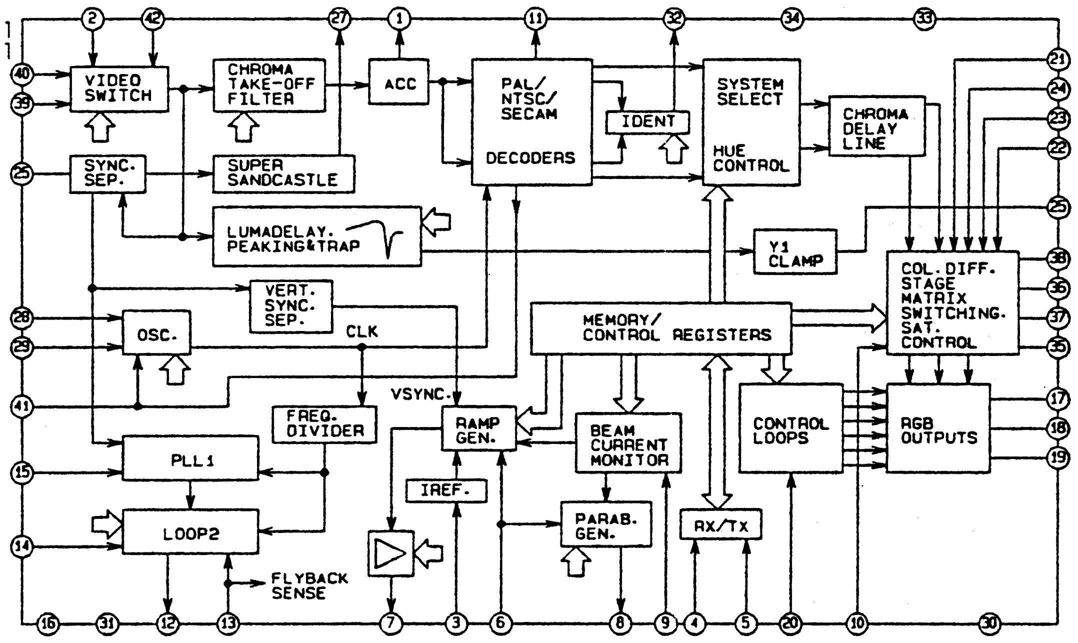
IC101
STV8224


STV8224
6dB
PIF PLL &AFC
VID AMP
WHITE NOISE & SPOT INVERT
AGC
LOGIC INTERFACE
TUNER AGC
DC VOLUME
SIF PLL
LIMITER &MUTE

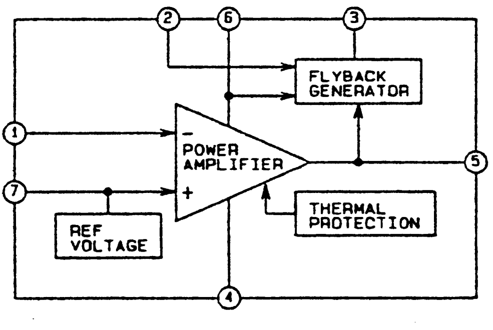
IC660
TEA5101B



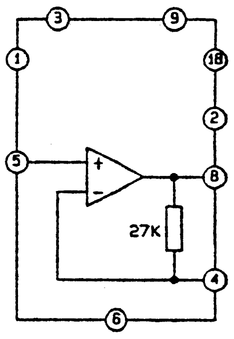
IC201
MC44031


VIDEO SWITCH
CHROMA TAKE-OFF FILTER
ACC
PAL/ NTSC/ SECAM DECODERS
IDENT
SYSTEM SELECT
HUE CONTROL
CHROMA DELAY LINE
SYNC. SEP.
SUPER SANDCASTLE
LUMADELAY. PEAKING&TRAP
Y1 CLAMP
COL. DIFF. STAGE MATRIX SWITCHING. SAT. CONTROL
VERT. SYNC. SEP.
OSC.
CLK
MEMORY/ CONTROL REGISTERS
VSYNC.
FREQ. DIVIDER
RAMP GEN.
BEAM CURRENT MONITOR
CONTROL LOOPS
RGB OUTPUTS
PLL1
IREF.
PARAB. GEN.
RX/TX
LOOP2
FLYBACK SENSE

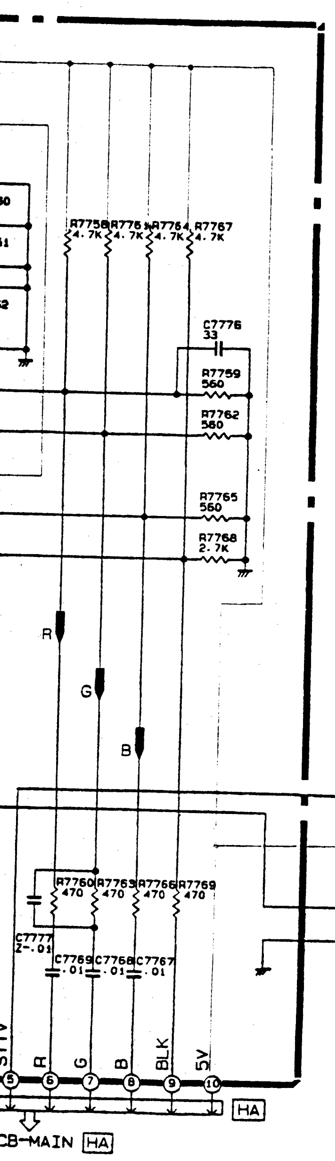
IC401
TDA8171


FLYBACK GENERATOR
POWER AMPLIFIER
REF VOLTAGE
THERMAL PROTECTION

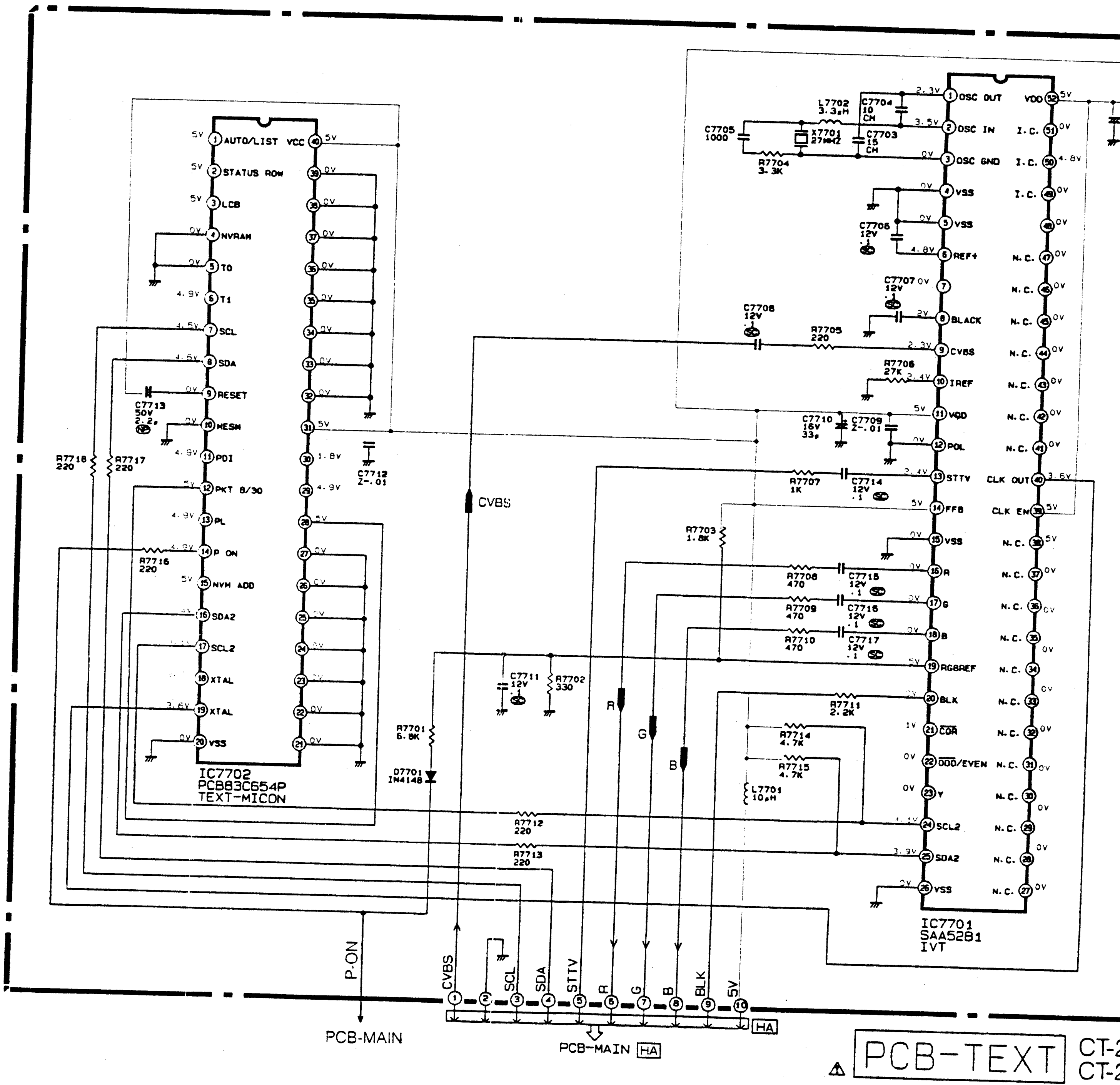
IC351
TDA7253



5 6 7 8 9 10



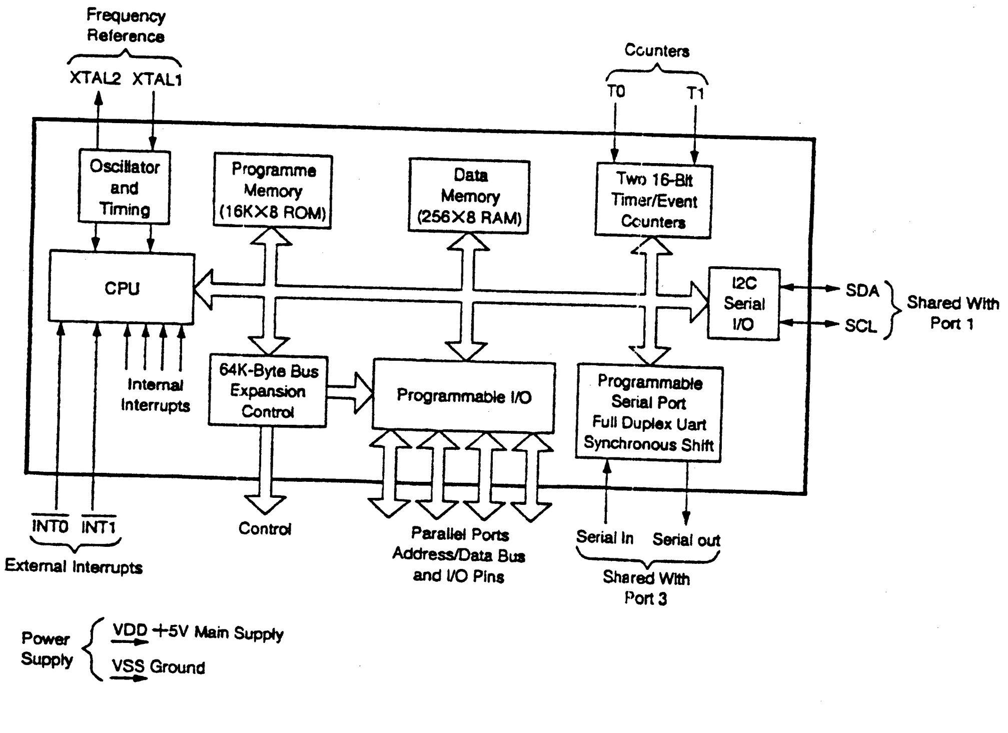
R7758 4.7K
R7761 4.7K
R7764 4.7K
R7767 4.7K
C7776 33
R7759 560
R7762 560
R7765 560
R7768 2.7K
R
G
B
R7760 470
R7763 470
R7766 470
R7769 470
C7777 Z-.01
C7769 .01
C7768 .01
C7767 .01
1
2
3
4
PCB-DELAY
STTV
R
G
B
BLK
5V
HA
PCB-MAIN HA



AUTO/LIST
STATUS ROW
LCB
NVRAM
T0
T1
SCL
SDA
RESET
MESH
PDI
PKT 8/30
PL
P ON
NVM ADD
SDA2
SCL2
XTAL
XTAL
VSS
VCC
C7713 50V 2.2μ
R7718 220
R7717 220
R7716 220
C7712 Z-.01
IC7702
PCB83C654P
TEXT-MICON
CVBS
R7701 6.8K
D7701 1N4148
C7711 12V .1
R7702 330
C7705 1000
L7702 3.3μH
C7704 10 CH
X7701 27MHZ
C7703 15 CH
R7704 3.3K
C7706 12V .1
C7707 12V
C7708 12V
R7705 220
R7706 27K
C7710 16V 33μ
C7709 Z-.01
R7707 1K
C7714 12V .1
R7703 1.8K
R7708 470
C7715 12V .1
R7709 470
C7716 12V .1
R7710 470
C7717 12V .1
R7711 2.2K
R7714 4.7K
R7715 4.7K
L7701 10μH
R7712 220
R7713 220
OSC OUT
OSC IN
OSC GND
VSS
VSS
REF+
BLACK
CVBS
IREF
VDD
POL
STTV
FFB
VSS
R
G
B
RGBREF
BLK
COR
ODD/EVEN
Y
SCL2
SDA2
VSS
VDD
I.C.
N.C.
CLK OUT
CLK EN
IC7701
SAA5281
IVT
R
G
B
P-ON
PCB-MAIN
CVBS
SCL
SDA
STTV
R
G
B
BLK
5V
PCB-MAIN HA
HA

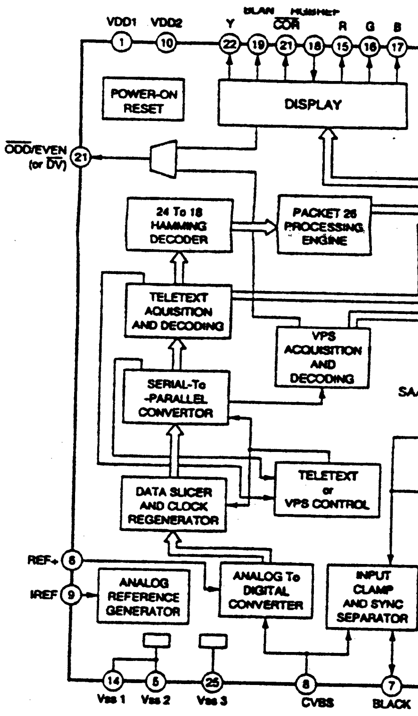
PCB-TEXT CT-2
CT-2
CT-2

IC7702 PCB83C654P



Frequency Reference
XTAL2 XTAL1
Counters
T0 T1
Oscillator and Timing
Programme Memory (16K×8 ROM)
Data Memory (256×8 RAM)
Two 16-Bit Timer/Event Counters
CPU
I2C Serial I/O
SDA
SCL
Shared With Port 1
Internal Interrupts
64K-Byte Bus Expansion Control
Programmable I/O
Programmable Serial Port Full Duplex Uart Synchronous Shift
INT0 INT1
External Interrupts
Control
Parallel Ports Address/Data Bus and I/O Pins
Serial In Serial out
Shared With Port 3
Power Supply
VDD +5V Main Supply
VSS Ground

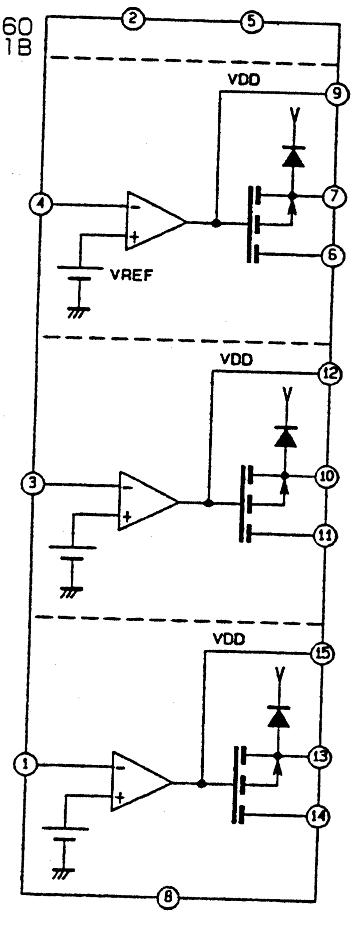
IC7701 SAA5281ZP/E



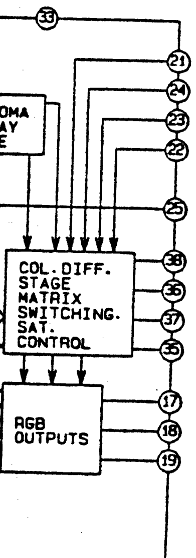
VDD1 VDD2
Y
BLAN
COR
RGBREF
R G B
POWER-ON RESET
DISPLAY
ODD/EVEN (or DV)
24 To 18 HAMMING DECODER
PACKET 26 PROCESSING ENGINE
TELETEXT AQUISITION AND DECODING
VPS ACQUISITION AND DECODING
SERIAL-To-PARALLEL CONVERTOR
TELETEXT or VPS CONTROL
DATA SLICER AND CLOCK REGENERATOR
REF+
IREF
ANALOG REFERENCE GENERATOR
ANALOG To DIGITAL CONVERTER
INPUT CLAMP AND SYNC SEPARATOR
Vss 1 Vss 2 Vss 3
CVBS
BLACK

-MAIN and CRT 〉

IC660
TEA5101B

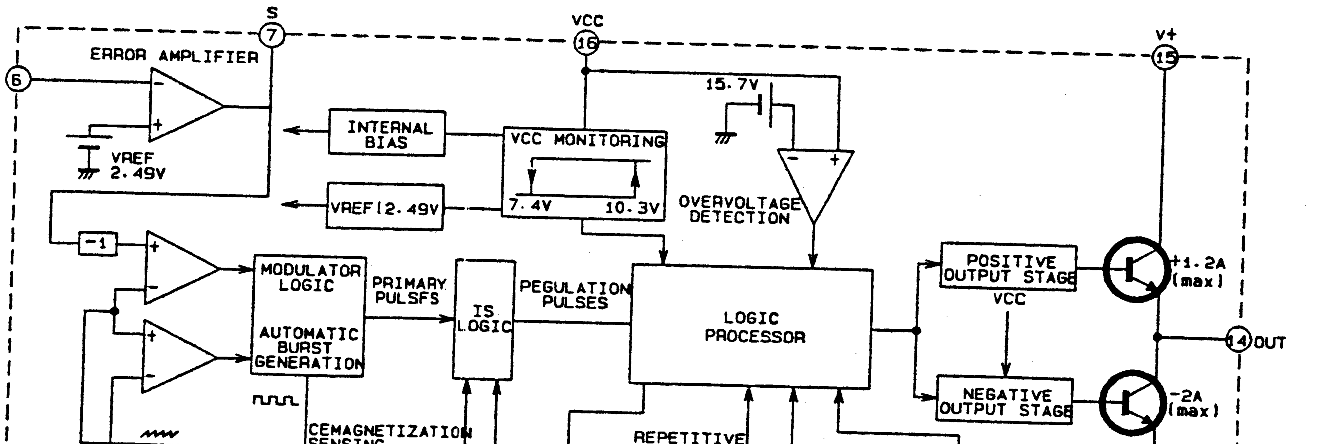


2
5
VDD
9
4
7
6
VREF
VDD
12
3
10
11
VDD
15
1
13
14
8

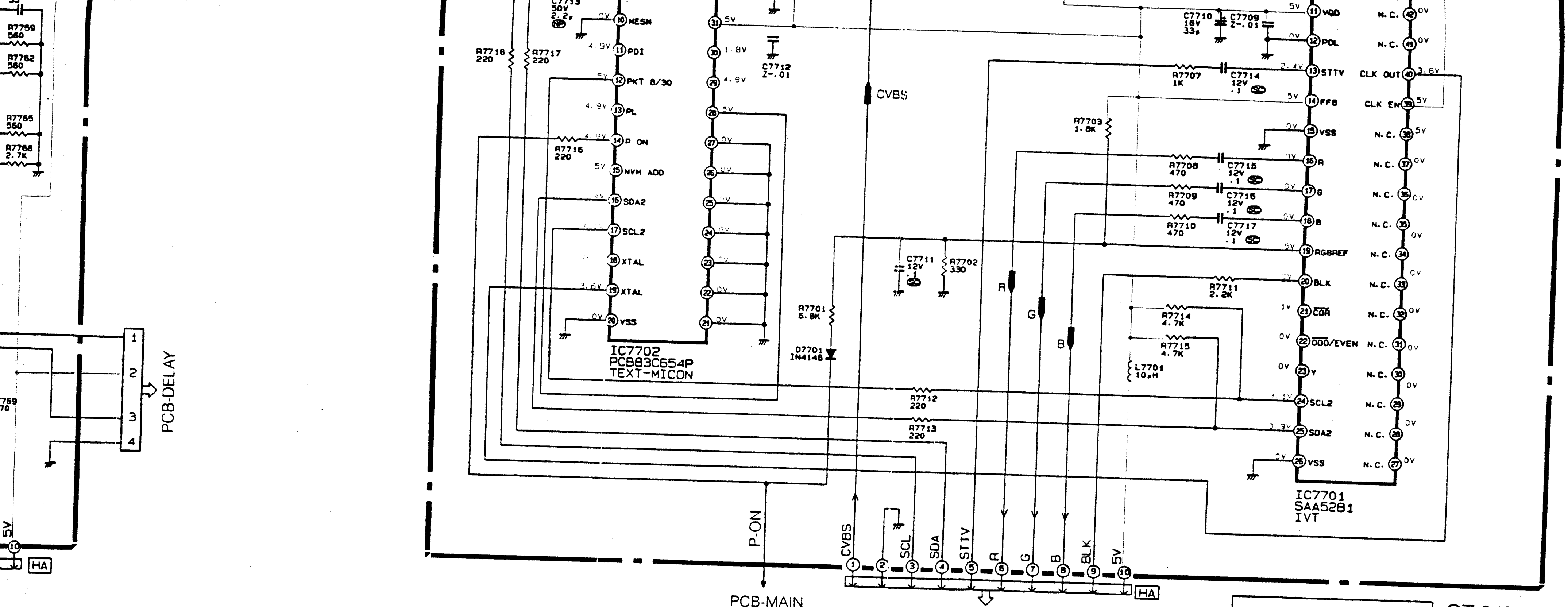


33
21
24
23
22
25
38
35
37
36
17
18
19
CHROMA DELAY LINE
COL. DIFF. STAGE MATRIX SWITCHING. SAT. CONTROL
RGB OUTPUTS

IC901
TEA2261

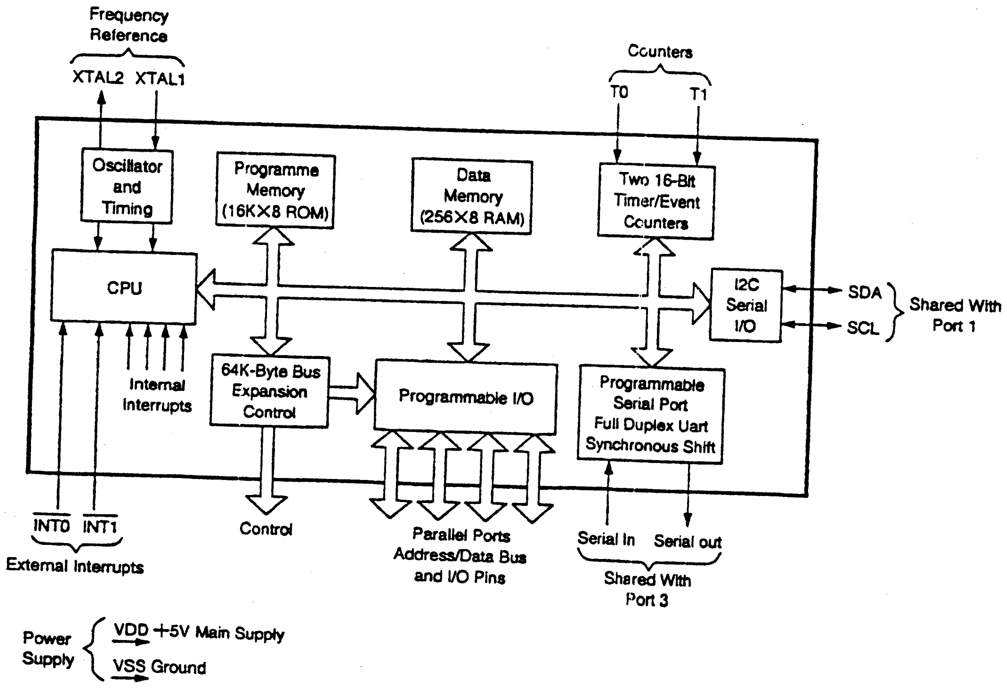


S
7
VCC
16
V+
15
E 6
ERROR AMPLIFIER
VREF 2.49V
INTERNAL BIAS
VCC MONITORING
15.7V
7.4V 10.3V
VREF(2.49V)
OVERVOLTAGE DETECTION
-1
MODULATOR LOGIC
AUTOMATIC BURST GENERATION
PRIMARY PULSES
IS LOGIC
PEGULATION PULSES
LOGIC PROCESSOR
POSITIVE OUTPUT STAGE
VCC
NEGATIVE OUTPUT STAGE
+1.2A (max)
-2A (max)
14 OUT
CEMAGNETIZATION SENSING
REPETITIVE

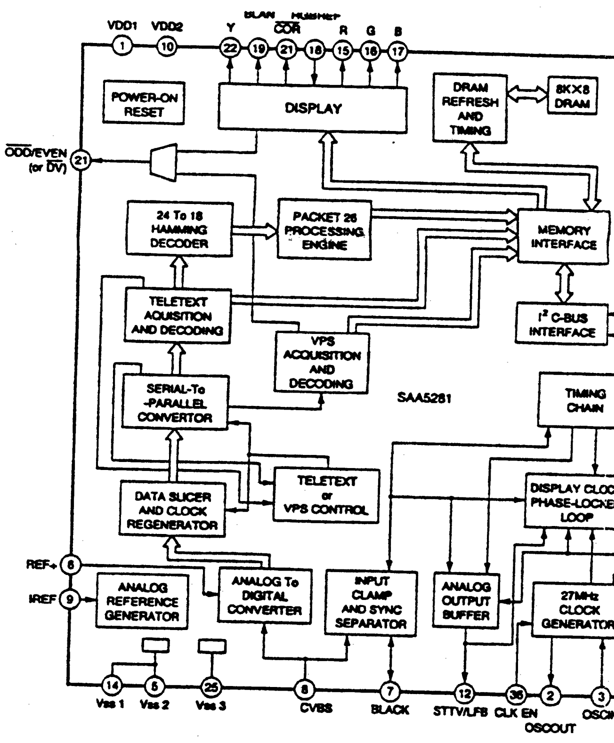

R7759 560
R7762 560
R7765 560
R7768 2.7K
PCB-DELAY
1
2
3
4
5V
HA
R7718 220
R7717 220
R7716 220
MESM
PDI
PKT 8/30
PL
P ON
NVM ADD
SDA2
SCL2
XTAL
XTAL
VSS
IC7702
PCB83C654P
TEXT-MICON
C7712 Z-.01
CVBS
R7703 1.8K
R7701 6.8K
D7701 1N4148
C7711 12V
R7702 330
R
G
B
R7712 220
R7713 220
R7707 1K
C7714 12V .1
R7708 470
R7709 470
R7710 470
C7715 12V .1
C7716 12V .1
C7717 12V .1
R7711 2.2K
R7714 4.7K
R7715 4.7K
L7701 10μH
C7710 16V 33μ
C7709 Z-.01
VDD
POL
STTV
FFB
VSS
R
G
B
RGBREF
BLK
COR
ODD/EVEN
Y
SCL2
SDA2
VSS
IC7701
SAA5281
IVT
N.C.
CLK OUT
CLK EN
P-ON
CVBS
SCL
SDA
STTV
R
G
B
BLK
5V
PCB-MAIN
PCB-MAIN HA
HA

⚠ PCB-TEXT CT-21M5RT
CT-25M5RT
CT-25M5RTN

IC7702 PCB83C654P

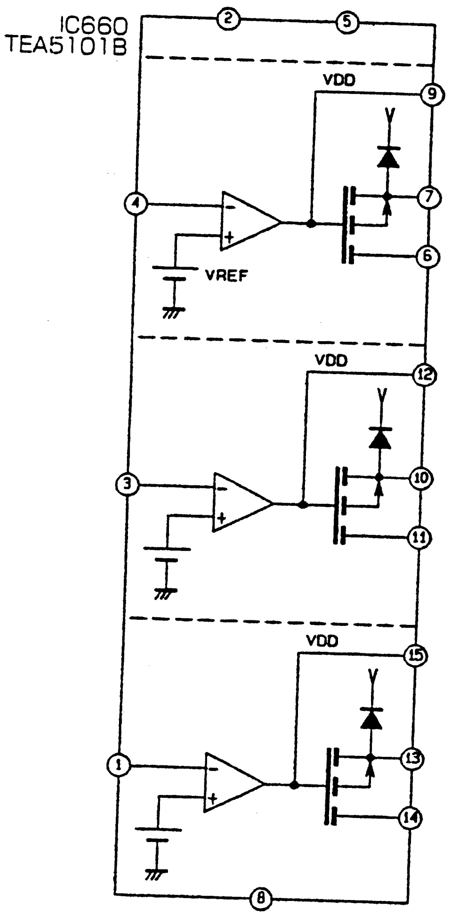

Frequency Reference
XTAL2
XTAL1
Oscillator and Timing
Programme Memory (16KX8 ROM)
Data Memory (256X8 RAM)
Counters
T0
T1
Two 16-Bit Timer/Event Counters
CPU
I2C Serial I/O
SDA
SCL
Shared With Port 1
Internal Interrupts
64K-Byte Bus Expansion Control
Programmable I/O
Programmable Serial Port Full Duplex Uart Synchronous Shift
INT0
INT1
External Interrupts
Control
Parallel Ports Address/Data Bus and I/O Pins
Serial In
Serial out
Shared With Port 3
Power Supply
VDD +5V Main Supply
VSS Ground

IC7701 SAA5281ZP/E

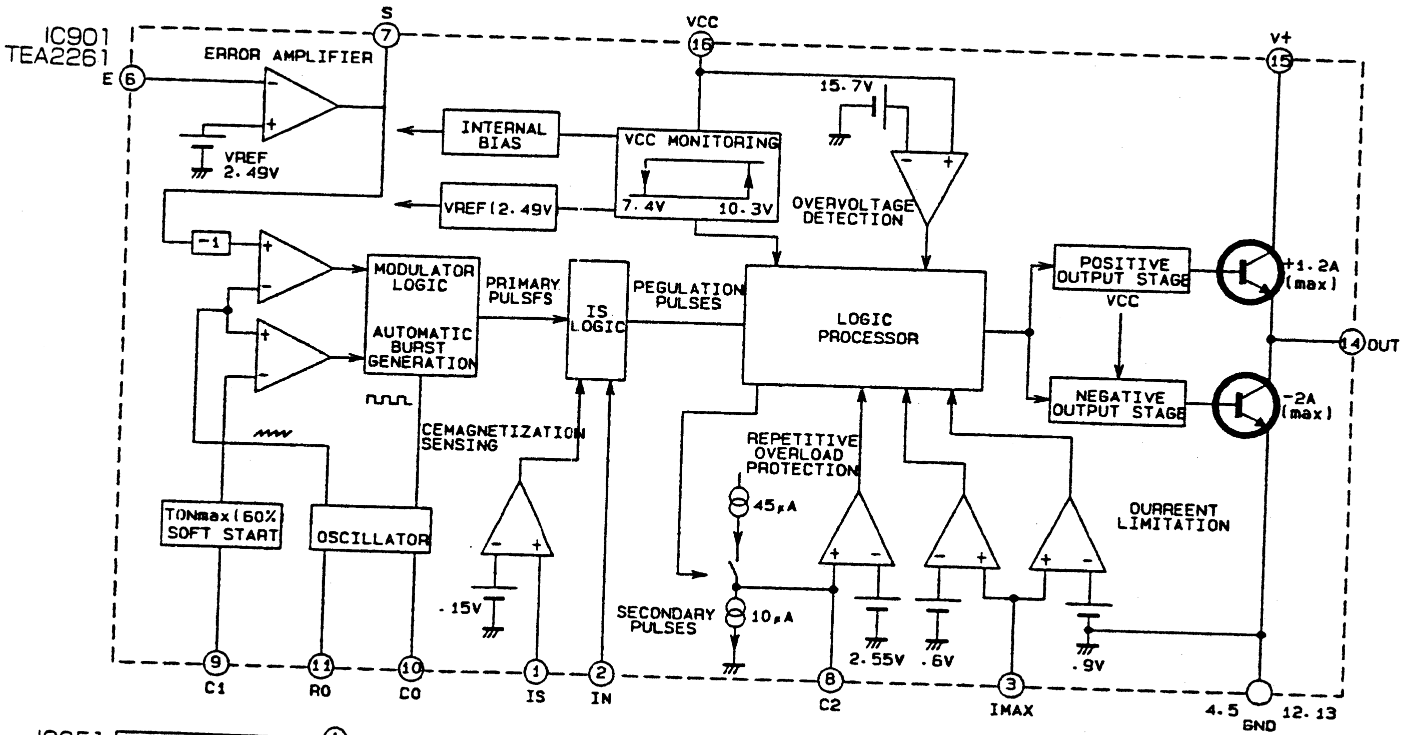

VDD1
VDD2
Y
BLAN
COR
R
G
B
POWER-ON RESET
DISPLAY
DRAM REFRESH AND TIMING
8KX8 DRAM
ODD/EVEN (or DV)
24 To 18 HAMMING DECODER
PACKET 26 PROCESSING ENGINE
MEMORY INTERFACE
TELETEXT AQUISITION AND DECODING
I2C-BUS INTERFACE
VPS ACQUISITION AND DECODING
SERIAL-To -PARALLEL CONVERTOR
SAA5281
TIMING CHAIN
DATA SLICER AND CLOCK REGENERATOR
TELETEXT or VPS CONTROL
DISPLAY CLOCK PHASE-LOCKED LOOP
REF+
IREF
ANALOG REFERENCE GENERATOR
ANALOG To DIGITAL CONVERTER
INPUT CLAMP AND SYNC SEPARATOR
ANALOG OUTPUT BUFFER
27MHz CLOCK GENERATOR
Vss 1
Vss 2
Vss 3
CVBS
BLACK
STTV/LFB
CLK EN
OSCOUT
OSCIN

and CRT 〉

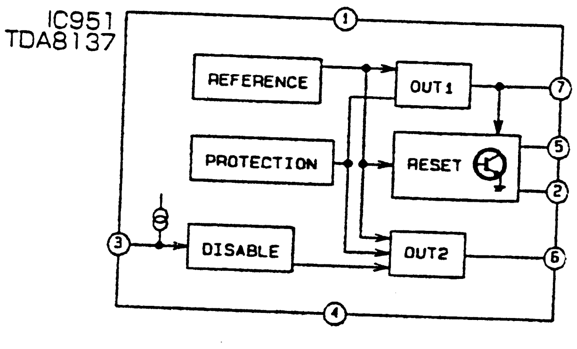
IC660
TEA5101B

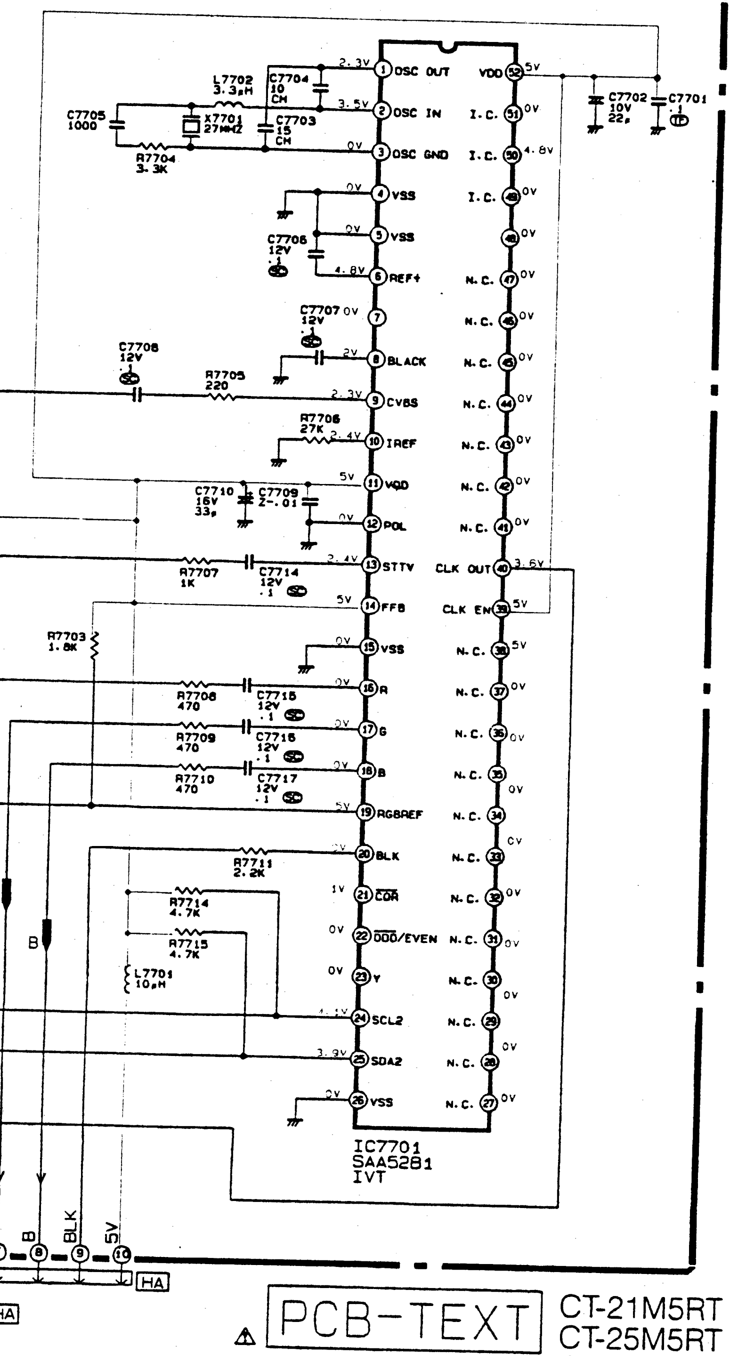

2
5
VDD
9
4
7
6
VREF
VDD
12
3
10
11
VDD
15
1
13
14
8

IC901
TEA2261

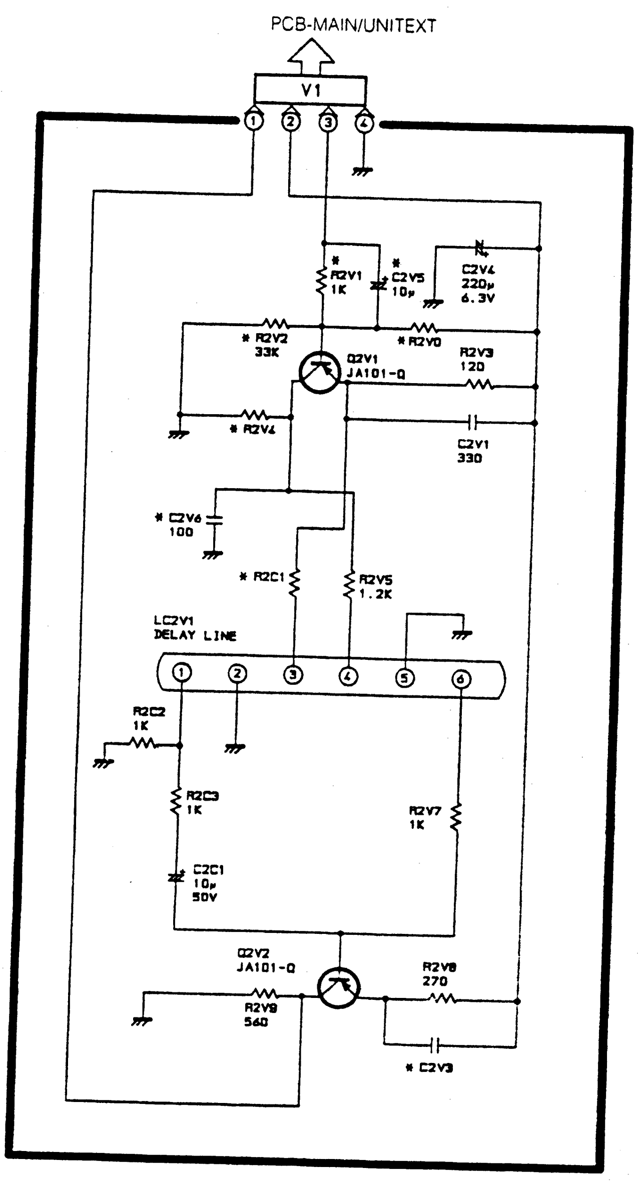

S
VCC
V+
E
ERROR AMPLIFIER
VREF 2.49V
INTERNAL BIAS
VCC MONITORING
VREF(2.49V
7.4V
10.3V
15.7V
OVERVOLTAGE DETECTION
-1
MODULATOR LOGIC
AUTOMATIC BURST GENERATION
PRIMARY PULSES
IS LOGIC
PEGULATION PULSES
LOGIC PROCESSOR
POSITIVE OUTPUT STAGE
VCC
NEGATIVE OUTPUT STAGE
+1.2A (max)
-2A (max)
OUT
CEMAGNETIZATION SENSING
REPETITIVE OVERLOAD PROTECTION
45μA
10μA
SECONDARY PULSES
OURREENT LIMITATION
TONmax(60%) SOFT START
OSCILLATOR
-15V
2.55V
.6V
.9V
C1
RO
CO
IS
IN
C2
IMAX
4.5
12.13
GND

IC951
TDA8137


1
REFERENCE
OUT1
7
PROTECTION
RESET
5
2
3
DISABLE
OUT2
6
4

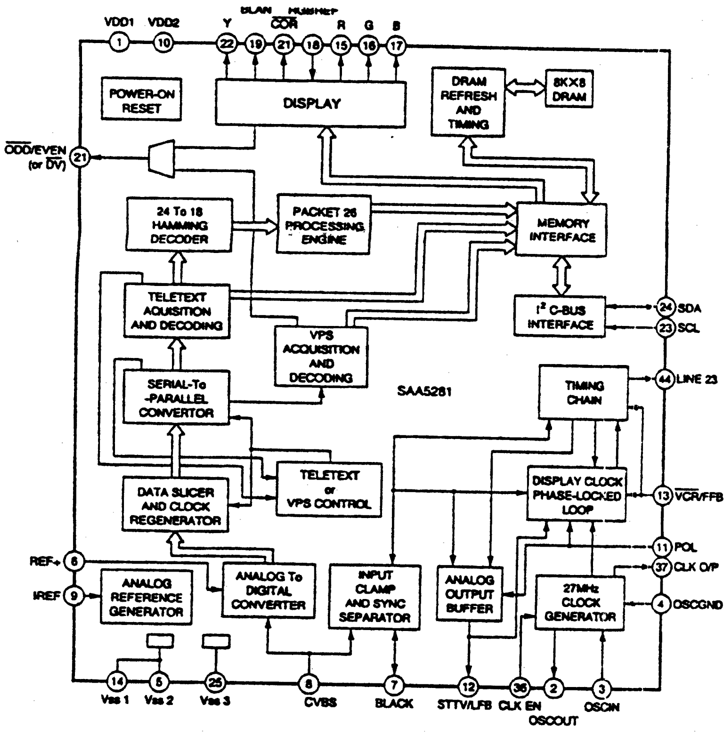

C7705
1000
L7702
3.3μH
C7704
10
CH
X7701
27MHz
C7703
15
CH
R7704
3.3K
1 OSC OUT
2 OSC IN
3 OSC GND
4 VSS
5 VSS
6 REF+
7
8 BLACK
9 CVBS
10 IREF
11 VGD
12 POL
13 STTV
14 FFB
15 VSS
16 R
17 G
18 B
19 RGBREF
20 BLK
21 COR
22 ODD/EVEN
23 Y
24 SCL2
25 SDA2
26 VSS
52 VDD
51 I.C.
50 I.C.
49 I.C.
48 N.C.
40 CLK OUT
39 CLK EN
C7702
10V
22μ
C7701
C7706
12V
C7707
12V
C7708
12V
R7705
220
R7706
27K
C7710
16V
33μ
C7709
Z-.01
R7707
1K
C7714
12V
R7703
1.8K
R7708
470
C7715
12V
R7709
470
C7716
12V
R7710
470
C7717
12V
R7711
2.2K
R7714
4.7K
R7715
4.7K
L7701
10μH
IC7701
SAA5281
IVT
B
BLK
5V
HA

PCB-TEXT CT-21M5RT
CT-25M5RT
CT-25M5RTN


PCB-MAIN/UNITEXT
V1
R2V1
1K
C2V5
10μ
C2V4
220μ
6.3V
R2V2
33K
R2V0
Q2V1
JA101-Q
R2V3
120
R2V4
C2V1
330
C2V6
100
R2C1
R2V5
1.2K
LC2V1
DELAY LINE
R2C2
1K
R2C3
1K
R2V7
1K
C2C1
10μ
50V
Q2V2
JA101-Q
R2V8
270
R2V9
560
C2V3

PCB-DELAY

IC7701 SAA5281ZP/E


VDD1
VDD2
Y
BLAN
COR
MUSHEF
R
G
B
POWER-ON RESET
DISPLAY
DRAM REFRESH AND TIMING
8KX8 DRAM
ODD/EVEN (or DV)
24 To 18 HAMMING DECODER
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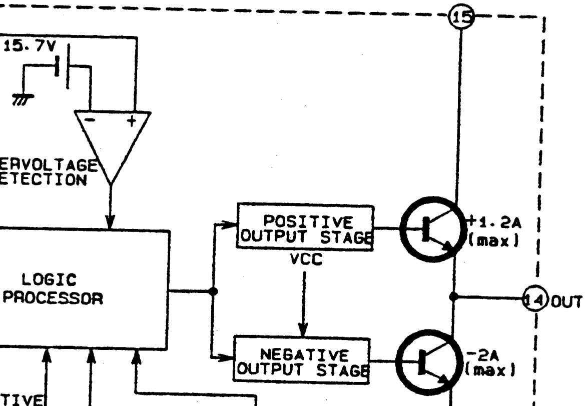
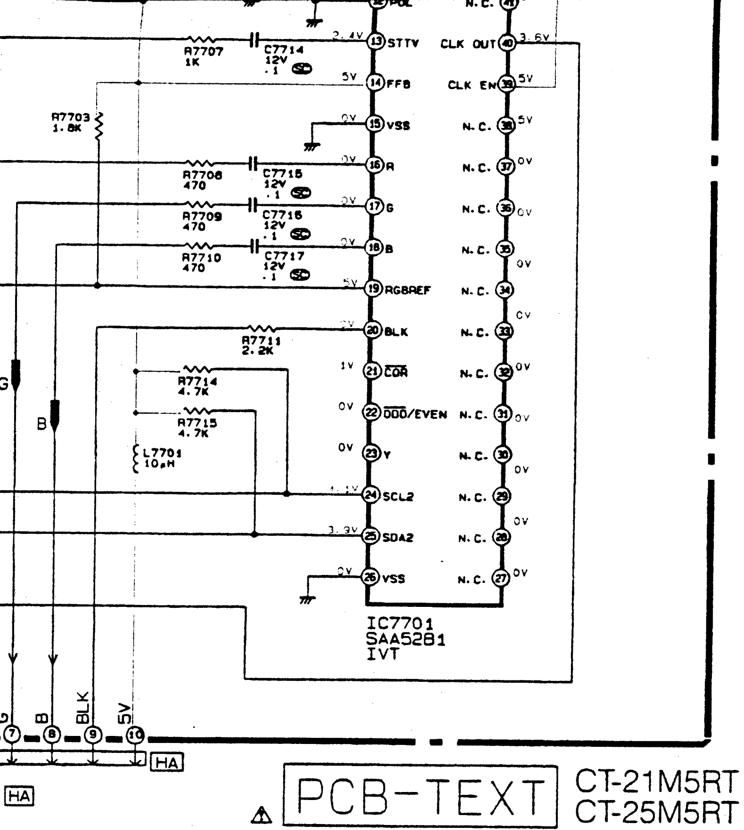
MEMORY INTERFACE
TELETEXT AQUISITION AND DECODING
VPS ACQUISITION AND DECODING
I² C-BUS INTERFACE
SDA
SCL
SERIAL-To -PARALLEL CONVERTOR
SAA5281
TIMING CHAIN
LINE 23
TELETEXT or VPS CONTROL
DATA SLICER AND CLOCK REGENERATOR
DISPLAY CLOCK PHASE-LOCKED LOOP
VCR/FFB
POL
CLK O/P
OSCGND
REF+
IREF
ANALOG REFERENCE GENERATOR
ANALOG To DIGITAL CONVERTER
INPUT CLAMP AND SYNC SEPARATOR
ANALOG OUTPUT BUFFER
27MHz CLOCK GENERATOR
Vss 1
Vss 2
Vss 3
CVBS
BLACK
STTV/LFB
CLK EN
OSCOUT
OSCIN

SDA } Shared With
SCL } Port 1

*** DIFFERENCE TABLE**

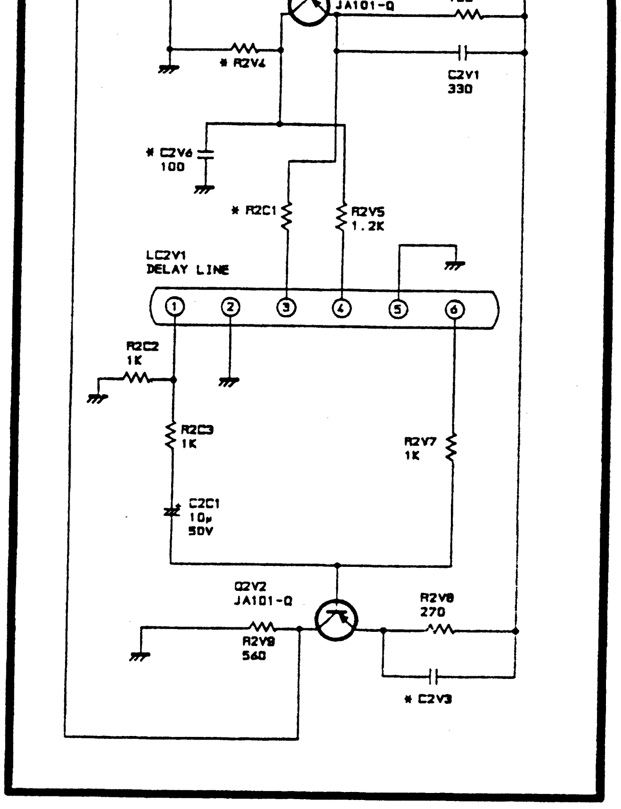
	21M5E 21M5RT 25M5E 25M5EN 25M5RT 25M5RTN	21M5ET 25M5ET 25M5ETN
C2V3	150	180
C2V5	—	●
C2V6	—	●
R2C1	390	100
R2V0	10K	15K
R2V1	●	—
R2V2	—	●
R2V4	120	330


V+
15
15.7V
ERVOLTAGE
ETECTION
LOGIC
PROCESSOR
POSITIVE
OUTPUT STAGE
VCC
+1.2A
(max)
14 OUT
NEGATIVE
OUTPUT STAGE
-2A
(max)
TIVE


R7707 1K
C7714 12V .1
STTV
FFB
VSS
R
G
B
RGBREF
BLK
COR
ODD/EVEN
Y
SCL2
SDA2
VSS
CLK OUT
CLK EN
N.C.
R7703 1.8K
R7708 470
C7715 12V .1
R7709 470
C7716 12V .1
R7710 470
C7717 12V .1
R7711 2.2K
R7714 4.7K
R7715 4.7K
L7701 10μH
IC7701
SAA5281
IVT
B
BLK
5V
HA

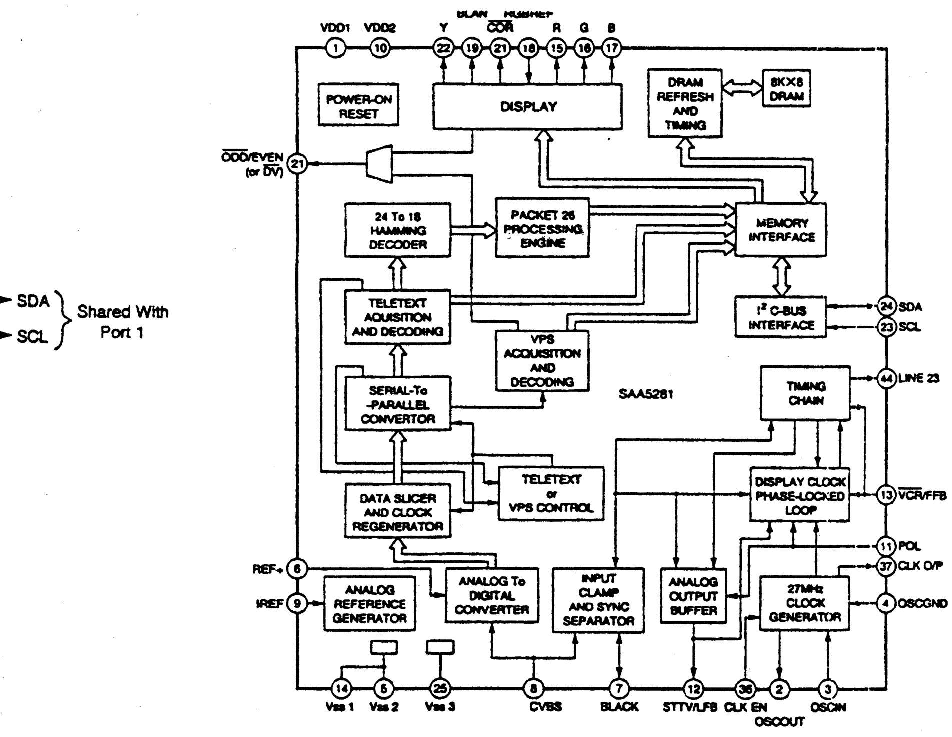
PCB-TEXT

CT-21M5RT
CT-25M5RT
CT-25M5RTN


JA101-Q
* R2V4
C2V1 330
* C2V6 100
* R2C1
R2V5 1.2K
LC2V1 DELAY LINE
R2C2 1K
R2C3 1K
R2V7 1K
C2C1 10μ 50V
Q2V2 JA101-Q
R2V8 270
R2V9 560
* C2V3

PCB-DELAY

IC7701 SAA5281ZP/E


VDD1
VDD2
Y
COR
R
G
B
POWER-ON RESET
DISPLAY
DRAM REFRESH AND TIMING
8KX8 DRAM
ODD/EVEN (or DV)
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CLK O/P
REF+
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ANALOG OUTPUT BUFFER
27MHz CLOCK GENERATOR
OSCGND
Vss 1
Vss 2
Vss 3
CVBS
BLACK
STTV/LFB
CLK EN
OSCOUT
OSCIN

✱ DIFFERENCE TABLE

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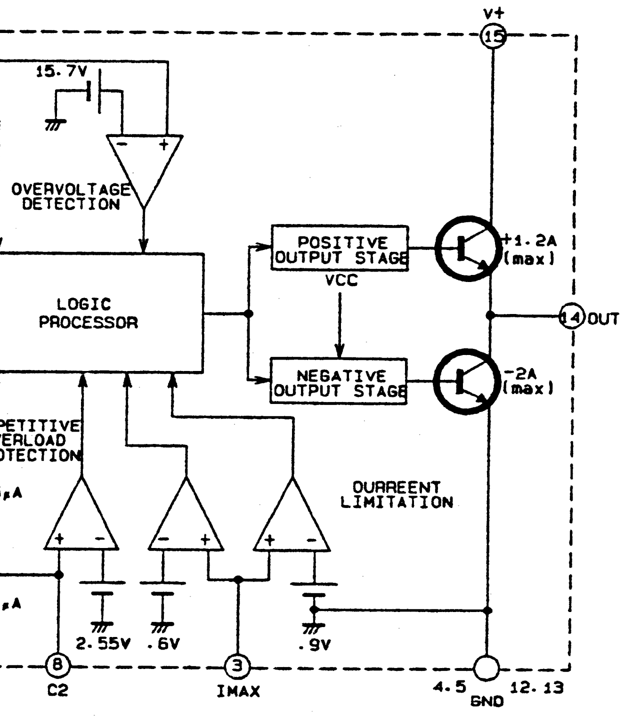
C2V5	—	●
C2V6	—	●
R2C1	390	100
R2V0	10K	15K
R2V1	●	—
R2V2	—	●
R2V4	120	330


V+
15
15.7V
OVERVOLTAGE DETECTION
LOGIC PROCESSOR
POSITIVE OUTPUT STAGE
VCC
NEGATIVE OUTPUT STAGE
+1.2A (max)
-2A (max)
14 OUT
REPETITIVE OVERLOAD PROTECTION
OURREENT LIMITATION
2.55V
.6V
.9V
8
C2
3
IMAX
4.5
GND
12.13

CT - 21M5E
CT - 21M5ET
CT - 21M5RT
CT - 25M5E
CT - 25M5EN
CT - 25M5ET
CT - 25 M5ETN
CT - 25M5RT
CT - 25M5RTN